

# AMERICAN BEE JOURNAL

MARCH

1914



## Exhibition of Hives at Chalon-sur-Saone

This exhibition was held in the district of France, where is located Mr. Champion, whom the Editor visited while in Burgundy.—(See "Notes from Abroad" in this issue.)

# American Bee Journal



PUBLISHED MONTHLY BY  
**American Bee Journal**  
 1st Nat'l Bank Bldg. Hamilton, Illinois

## IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is \$1.00 a year, in the United States of America and Mexico; in Canada, \$1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

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**Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.**

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**Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD**

Extra Breeding Queens, \$3.00; Selected, \$2.00; Fertilized, \$1.50; lower prices per dozen or more Queens, Safe arrival guaranteed. Write

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This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

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This department will be really new. It will not be "schooly," not "nature study," not to induce parents and educators to say, "It is good for the children," but it will appeal directly to the young folks themselves, and will help them to enjoy natural objects that surround them. It will be true to its name.

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Our new **Illustrated catalogs** for 1914 are here and being mailed out. Send your name for one.

Send us list of goods wanted, and receive our **special prices** for quantity orders. **Beeswax** is in great demand. Send it in now. We pay **32 cents Cash, 34 cents in Trade.** Shoot it in.

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"Griggs is always on the Job."

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**QUALITY** Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

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# American Bee Journal

## CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

### FROFALCON QUEENS

Everything for the beekeeper. Address.  
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Please mention Am. Bee Journal when writing.

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Read what J. L. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 80 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

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The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

### 3-Band, Golden, 5-Band and Carniolan

bred in separate yards, ready March 20, Untested, one, \$1; six, \$5; 12, \$9; 25, \$17.50; 50, \$34; 100, \$65. Tested, one, \$1.50; six, \$8; 12, \$15. Breeders of either strain, \$5. Nuclei with untested queen, one-frame, \$2.50; six one-frame, \$15; two-frame \$3.50; six two-frame \$20.40; nuclei with tested queen, one-frame, \$3.00; six one-frame, \$17.40; two-frame, \$4; six two-frame \$23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

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SAVES { HONEY TIME MONEY } AT ALL DEALERS

Each, 15c; Doz., \$1.65, postpaid

If your Dealer does not keep them, order from Factory, with complete instructions.

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## BEEKEEPERS' SUPPLIES

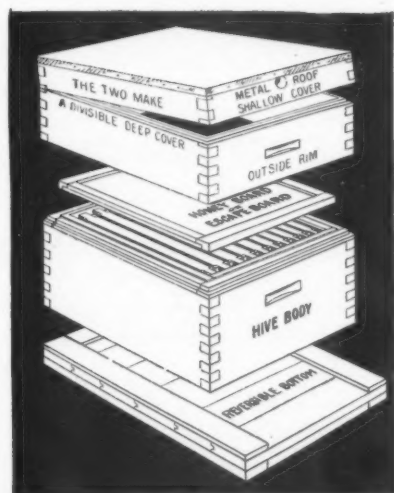
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Get my prices before placing your orders.

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## PROTECTION HIVE.

The shallow Metal Roof Cover and the Outside Rim make a divisible deep cover which can be handled together or in part. They eliminate the Chaff Tray nuisance, and the heavy bungle-some deep cover in manipulation. The Rim holds the overhead packing in winter and acts as a super protector at other times. This combination is the finest in hive construction on the market today.

Dead-air space or packing as you prefer; 7/8 material in the outer wall. Special circular showing 10 illustrations will explain all.

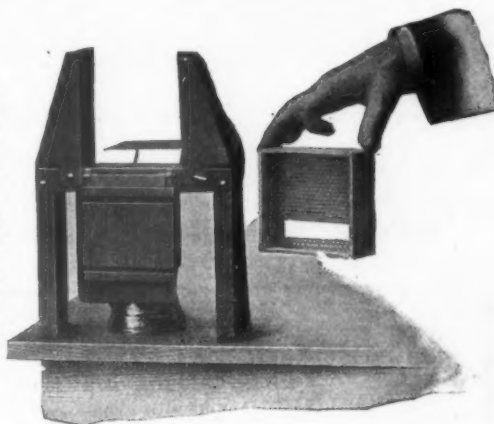
5 10-frame hives like cut...\$13.00

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## WOODMAN'S SECTION FIXER

A New Machine of pressed steel for folding sections and putting in top and bottom starters all at one handling. A great time saver and a good job assured with ease. With top and bottom starter the comb is firmly attached to all four sides, a requirement to grade Fancy. Increase the value of your crop this season by this method. We want every one to try this machine. We guarantee satisfaction. Adjustable to any width, 4 1/4 x 4 1/4 or 4 x 5 section. Model received with much favor by recent Detroit and Chicago Beekeepers' Conventions. Price, \$2.50 f.o.b. Weight, 5 lbs. Send for special circular showing large illustrations.

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Grand Rapids, Michigan



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BEE SMOKER  
Patented

## The New Bingham Bee-Smoker

the all important tool of the most extensive honey-producers of the world. This illustration shows the remarkable steel-fire grate which such men as Mr. France, Mr. Rauchfuss, the Dadants and others say is the best on the market. The Smoke Engine grate has 381 holes for the air and draft, equal to an opening 2 inches square. Buy the large sizes and be pleased. For sale at your dealers or direct. Weight each.

Smoke Engine	4-inch stove...	1 1/4 lbs.	\$1.25
Doctor	3 1/2-inch stove...	1 1/2 "	.85
Two larger sizes in copper, extra			.50
Conqueror	3-inch stove...	1 1/4 "	.75
Little Wonder	2 1/2-inch stove...	1 "	.50

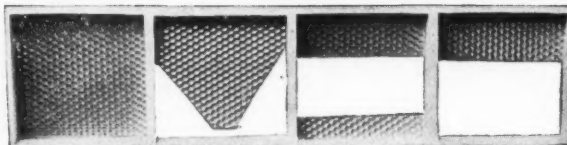
Two largest sizes with hinged cover.

**A. G. WOODMAN COMPANY,**  
Grand Rapids, Michigan

# American Bee Journal

## "Falcon" Hives, Supplies and Foundation

Everything for  
the  
BEEKEEPER



"falcon"  
Foundation made  
in the "falcon"  
plant at  
Falconer, N. Y.

**SUPPLIES FOR 1914**—Take inventory of supplies now and figure what you will need for a slim season. Get them ready at odd times in the winter; and if there is a good season you will have ample time to re-order in April and get them for use. We like to make "Inventory Sales" of "Falcon" supplies, for we know that we are dealing with an up-to-date beekeeper.

**INVESTMENT**—What is the investment of an extra \$25.00 in supplies to the loss of 500 pounds of honey? Resolve to change for 1914 and buy "Falcon" supplies now.

**EARLY-ORDER DISCOUNT**—For "Falcon" hives and supplies bought now we give an early-order cash discount equal to 12 percent per year. You see it pays for a strictly money basis. Write for early-order discounts, and send list of wants for quotation.

**"FALCON" QUALITY**—In making our beehives, all of our waste lumber is made into cheap toy building-blocks, so that we are able to put better material in our hives and goods. Get a trial lot this fall so that you can see for yourself, and still have time to order 1914 supplies.

**FREE SAMPLES** of our famous "Falcon" foundation, made in our factory at Falconer, N. Y., cheerfully sent postpaid with copy of catalog, and name of nearest dealer if desired.

**FACTORY W. T. FALCONER MFG. CO., - Falconer, N. Y., U. S. A**  
*Where the good bee-hives come from*



### BUY YOUR HIVES AT MANUFACTURER'S PRICES

The largest manufacturing plant of Cedar Bee-Hives on the Pacific Coast. Cedar is the best and most lasting wood for any climate. The prices for which we are to-day selling these hives is not even approached by any other first class hive made. Get our prices, they will make you smile.

**BREW MANUFACTURING COMPANY, Puyallup, Washington**

### Quality Hill Queens

"The queens you'll eventually buy"

Buy Quality Hill famous utility queens, an excellent honey-gathering strain of light or dark Italians. Breeders selected for color among mothers exceeding average apiary yield. Drone mothers from the highest yielders only. Winter excellently here, and have proven especially resistant to foul brood. All queens reared in full colonies while fed; mated in 4-frame nuclei, which gives large, vigorous and prolific queens. Purity of mating, safe arrival, freedom from disease, and satisfaction guaranteed. Write today for booklet, "A Story of Success."

	May 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12
Untested.....	\$1.00	\$5.00	\$9.00	\$.80	\$4.75	\$8.50
Tested.....	1.75	9.00	17.00	1.50	8.00	15.00
Select tested.....	2.75 straight			2.50 straight		

Write for breeders—\$4.00 and up.

Reference: Plainfield State Bank.

5 percent discount on dozen orders—delivery after July 1.

**QUALITY HILL APIARIES, - - - Plainfield, Illinois**



### EARLY ORDER DISCOUNTS WILL Pay You to Buy Bee Supplies Now

29 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.

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### We Make a Specialty of Manufacturing SECTIONS

They are the Finest in the Land—  
None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. DUBY, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

**AUG. LOTZ & CO.**  
Boyd, Wis.

Please mention Am. Bee Journal when writing.

### LARGEST, BEST

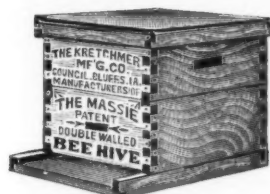
and most complete line of Bee and Poultry Supplies ever seen in Illinois at the lowest living prices. Satisfaction guaranteed or money refunded. Established in 1890. Send for our new catalog. Let us hear from you.

**H. S. DUBY & SON, St. Anne, Ill.**



# American Bee Journal

## The Double-Walled Massie Bee-Hive



**THE MASSIE HIVE**

For Comb or Extracted Honey

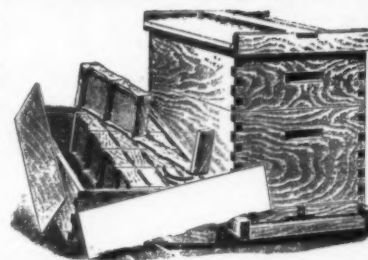
**Surest Protection for Bees—Increased Supply of Honey—  
The Best Hive for any Climate**

Furnished in the clearest of lumber in either Cypress, White Pine or Redwood

### THE MASSIE VENTILATED BOTTOM

Admits fresh air into the hive, lessening the chance of swarming, and giving renewed energy to the bees.

Fifty years in the bee supply business has shown us that the **MASSIE** is the **very best hive**, and testimonials to this effect are received daily from those who are using this hive.



The Dovetailed Hive.

**WHY NOT GIVE US A TRIAL ORDER ?**

**SAISFACTION FULLY GUARANTEED**

We are also extensive manufacturers of **Dovetailed Hives** and **all other Apiarian Supplies**. If you are in the market for supplies, be sure to get our prices before buying elsewhere. We issue a 72-page illustrated catalog which will be mailed to any one upon request.

**KRETCHMER MFG. CO., COUNCIL BLUFFS, IOWA**

## FLAX BOARD

Nearly every Beekeeper in a cold climate has moisture collect on his hive-cover which falls back on the bees and disturbs them very much the same as it would you when cold water falls on you when sleeping.

Flax Board, the best insulating material known, will retain the heat so there will be no condensation. Hives will be warm and dry; no moisture will collect in the dampest cellar or outdoors. We recommend its use under the cover, but it is valuable over the bottom and on the walls of the hives when the bees are outdoors.

We can furnish Flax Board Quilts to fit the top of the hive as follows:

### Introductory Price.

	One-half inch thick.
8 frame, 13 $\frac{1}{2}$ "x20".....	each \$ .10
8.....	per 100 6.00
10 frame, 16"x20".....	each \$ .11
10.....	per 100 7.00

Can furnish any size desired.

**100 Nicollet Island MINNESOTA BEE-SUPPLY COMPANY,  
Minneapolis, Minnesota**

## Root's Goods in Michigan

Our Specialty — The "Root Quality" Bee Supplies to Michigan Beekeepers Prompt Service in Shipping. We sell at Factory Prices— Beeswax Wanted. Send for 1914 Catalog Showing Our Parcel Post Service.

**M. H. Hunt & Son, Dept. A, Lansing, Mich.**

### BEE - SUPPLIES

Send your name for new 1914 catalog out in January. Dept. S., C. C. Clemons Bee Supply Co., Kansas City, Missouri.

### CO-OPERATION

means **buying right** and **selling right**. We are a co-operative association, and sell the best Bee-Supplies obtainable at the right prices. It will pay Western Bee-Keepers to send for our Illustrated Catalog.

**Colorado Honey-Producers' Association  
Denver, Colorado**

### Try My Bright ITALIAN QUEENS

This is what one customer writes:—

JOSEPHINE, TEX., June 10, 1913.  
MR. M. BATES, Greenville, Ala.  
Dear Sir:—I am sending you \$3.00 for which please send me 12 Untested Golden Italian Queens. The queens you sent me are fine, and old bee rearers say they are the finest they ever saw. They have surely made a reputation here for you. Several men say they will order queens soon.

A. M. MORRISON.

I have other letters that say the same. Selected Untested, each \$1.00; Tested, each \$1.50; 2-frame nuclei, each \$2.50. I guarantee safe arrival and perfect satisfaction.

**M. BATES, Route 4, Greenville, Ala.**

### THE A. I. ROOT COMPANY'S CANADIAN HOUSE

**DADANT'S FOUNDATION  
Poultry Supplies, Seeds**

Write for a Catalog

**THE CHAS. E. HOPPER COMPANY**

185 Wright Avenue,

Toronto, Ont.

## W.H.Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, \$1.25; 5 for \$5.00; Breeders, each \$5.00. Address

**W. H. Laws, Beeville, Texas.**

### BEEKEEPERS' SUPPLIES

Write us for our 64-page catalog. Free. Full information given to all inquiries. Let us hear from you. We handle the best of bee-supplies for the beekeeper. Our shipping facilities are good. We cater to parcel post and express orders—none too small nor too large. Beeswax exchanged for supplies or cash. **John Nebel & Son Supply Co., High Hill, Missouri**

## Honey Comb and Extracted

We can furnish both comb and extracted honey to beekeepers who have run out of their own product. All our honey is strictly First Class. Italian Bees and Queens in season. Write for prices.

**Larshaw Honey Co., Carlisle, Ind.**

### QUICK SHIPMENT OF QUEENS



of 3-band stock reared for honey-gathering qualities

Untested, June, \$1.00. Later, 75c

Tested, \$1.50. Select tested, \$2.

Send your orders now and be assured of having queens when you want them. **R. A. SHULTS, Cosby, Tenn.**



# When You Buy Lewis Beeware

—YOU GET—

**Lewis Quality** Which means that all Lewis Hives are made out of clear white pine, and Lewis Sections made out of fine white basswood. Material in these goods is the best obtainable, selected by experts.

**Lewis Workmanship** The Lewis Factory is equipped with the latest improved machinery, constantly watched by experts. The Lewis head mechanic has 36 years of bee-supply experience; the superintendent of bee-hive department, 30 years; the superintendent of sections, 29 years. These and many other skilled men have a hand in all the Lewis goods you buy.

**Lewis Packing** All Lewis Beeware is carefully and accurately packed—a patent woven wood-and-wire package made only by the Lewis Company is employed largely in packing; this makes the package light, compact and damage-proof.

**Lewis Service** Years ago all goods were shipped direct from the factory with attending high freight-rates and delays during the honey season; **now** Lewis Beeware can be obtained almost at your own door. Over 30 Distributing Houses carrying Lewis Beeware by the carload, are dotted all over the United States and foreign countries. Write for the name of the one nearest you.

Our New Catalog for 1914 is Now Out. Send for One

**G. B. Lewis Company,**

**Manufacturers of Beeware,**

**Watertown, - - - Wisconsin**



(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at \$1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.  
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., MARCH, 1914

Vol. LIV.—No. 3

## EDITORIAL COMMENTS

### A Season's Work

The method of production given by Mr. F. W. Hall, on another page, may not appeal to all producers of extracted honey. Mr. Hall, however, is a large producer who manages a number of out-apiaries, and who harvested some 40,000 pounds of honey in 1913. As will be seen, the gist of his method consists in dequeening during the honey harvest, and avoiding swarming in this way while securing young queens in most of his colonies. The advantage of that method lies in avoiding the nursing of brood at a time when the bees would hatch too late for the first honey crop and too early for the second. The great science of beekeeping is to have the field workers at the right time. Mr. Hall shows us that he understands that. His success should induce us to give full consideration to his system. Of course methods must be varied to suit the conditions of the honey crop in different countries.

### Alin Caillas

Mr. Alin Caillas, whose portrait we reproduce in this number, and who also supplies us with a series of articles on honey and its adulteration, is the author of a very interesting little work entitled, "Les Trésors d'une Goutte de Miel" (The treasures in a drop of honey). He is an agricultural engineer, laureate of the National Agricultural Association for a new process of analysis of honey. He has also obtained the "prix d'honneur," a vase of Sèvres china, from the President of the French

Republic, for his most extraordinary exhibit of beekeeping, at Avignon in December, 1913. He is making a specialty of honey studies and analysis. We made mention of one of our visits to his chemical laboratory in our September number, page 294. He is the official analyst of the French National Beekeepers' Association, and a young man of great ability.

### Comb Honey by Parcel Post

The readers will find in our contributions an article from the pen of Mr. Allen Latham, which we commend to their consideration. But the parcel post will not fulfill its mission properly until perishable and fragile articles may be sent as safely as if carried by the most careful transporting agents.

We must, as a nation, get rid of the idea that all mail matter is to be put into sacks and thrown about like old rags. The nations of Europe have better methods for transporting perishable goods than we have ever used. America is practical and progressive, and must sooner or later do these things *at least as well as the Europeans*. Let us agitate these questions until the riddle is solved. It is not a hard one.

### Death of John Phin

John Phin, author of the "Practical Dictionary of Apiculture," 1884, died of pneumonia during the closing days of 1913, at the age of 83, in Patterson, N. J. After retirement from teaching 20 years ago, he attained prominence as

a microscopist. He wrote more than 200 books on scientific and other subjects. He was born in Scotland, coming to this country when 21. He retained an interest in beekeeping to the last.

### Spraying Fruit Trees

Gleanings in Bee Culture quotes, and we think it worth while to quote also the following from Prof. Surface in the Practical Farmer: "No trees, shrubs, bushes or vines of any kind should ever be sprayed while in bloom. Please tell this to your neighbors. Please tell it to the editors of all the papers. Proclaim it from the rooftops. Let everybody learn that, to spray a tree while in bloom, is liable not only to injure the fruit and thus help to destroy the crop, but also kills the bees and other insects that are absolutely essential in carrying pollen from fruit to fruit, and thus help fertilize the blossoms and ensure a crop."

### Scent and Queen Introduction

In this number Dr. Bruennich suggests that errors in queen introduction may result from the queens not being marked in an infallible manner. He modestly abstains from telling that he has a most excellent method of marking his queens, which we witnessed when visiting him at Zug. We trust he will fully explain this method to our readers. It not only gives the queen an individual mark, but makes her very conspicuous, so she may be found very easily.

### Wintering Bees in Attics

In the February Beekeepers' Review, on the first page, Mr. Pearce criticizes the advice given by the Dadants against wintering bees in rooms and attics, where the temperature varies. He as-

# American Bee Journal

serts that attics are a grand success as places in which to "keep" bees.

Has not Mr. Pearce misunderstood us? We have nowhere said that bees might not be kept successfully in rooms or attics and wintered there, if not confined to the hive. We warned beginners, and do yet, against the removal of colonies from their summer stands to confine them to any room where the temperature varies, instead of using a cellar or some other repository of uniform temperature. Perhaps we were not explicit enough. Here is what we said:

"To winter bees indoors, they should be kept at a temperature of 40 to 45 degrees, in quietude and darkness.

"A room or garret, where the temperature varies is a bad place to winter bees."

We do not believe that there is any doubt in the mind of any experienced apiarist about the possibility and advantage of using a room or an attic as a bee house. But very few persons are so situated that they have at their disposal a room or an attic, handy and vacant, where more than two or three hives of bees may be kept. This is the equivalent of a bee house.

## Meeting of the National

The National Association had both a beekeepers' meeting and a business meeting at St. Louis, Mo., Feb. 17-18. Thanks to the efficiency of the Missouri delegate, Mr. R. A. Holekamp, a splendid hall had been secured, free of expense, at the Planters Hotel, one of the best in the city.

Some 15 delegates were present from as many States or parts of States. Mr. Tyrrell, the secretary, was not present. Mr. Wesley Foster, appointed in his stead, made a very efficient secretary, *pro tem*.

Lengthy discussions on the policies to be followed brought about a decision to again revise the constitution and incorporate the association under the laws of Missouri. In spite of very pointed differences of opinion among the delegates, a very fraternal spirit prevailed during the session.

The officers elected were: Burton N. Gates, re-elected president; Frank C. Pellett, vice-president; George W. Williams, of Redkey, Ind., secretary and treasurer. These two offices were combined at the suggestion of the retiring treasurer, to simplify work.

The directors elected were: J. M. Buchanan, of Tennessee, re-elected; E. G. Carr, of New Jersey, and George W. Williams, of Indiana; Messrs. Townsend and Foster holding over.

## MISCELLANEOUS NEWS ITEMS



**Honey Labels.**—We are foiled on getting labels to stick to tin pails. Have put alum in flour paste, but when dry it cracks off. How do you do it?—C. C. MILLER.

We have never had any trouble in getting labels to stick to tin, with ordinary flour paste. We make it fairly thin and use it warm or cold. It gets thicker by standing. Alum is good to preserve it, if you want to keep it from souring or molding. We have kept it in this way a month. We do not think that alum has any influence to keep it from sticking or to make it stick. Thin labels stick best, because they shrink less than heavy ones, when drying. The tin may be at fault, but we could not think what is wrong with it unless it be dusty.

Our own labels stick so well that we have to soak the pail in water, when we want to take the label off. We are very much inclined to think that the only fault in your case comes from too good paper in the labels.

**The Langstroth Manuscript.**—In our February number we gave copy of manuscript written by L. L. Langstroth on the subject of flour as pollen for bees, offering a prize to the first one who would give the correct interpretation. Out of the first 30 or 40 answers received only 2 were correct, and as these came in the same mail, we are placing both the parties on our mail list for an additional year. The winners were Mr. H. W. Loomis, of Kilbourn, Wis., and Mr. Allen Latham, of Norwichtown, Conn.

We give the correct reading as follows: "Bees to load up flour use their honey to make it knead. When natural pollen comes (it) is moister or they get honey to moisten from blossoms. They will therefore stop on flour even if it was just as good. When frost kills pollen flour used again."—[The word in parenthesis is added by us.—EDITOR.]

**The Northern Michigan Meeting.**—Mr. Ira D. Bartlett, secretary of the Northern Michigan Association, asks us to announce that an excellent program has been prepared for the meeting in Petoskey on March 10 and 11. Prizes will be offered for the best displays of comb and extracted honey and beeswax. It is the aim of the association

to have as large a display as possible. Beekeepers who possibly can should not fail to attend.

**The Market for Honey in France.**—The following was taken from the Daily Consular and Trade Reports:

"The sale and consumption of honey in France varies, in a great measure, according to the localities or regions in which it is produced. In certain sections of the country it is abundant and easily obtainable; in others there exists so little taste for it that only a few grocers keep it in stock. The French departments producing the greatest quantity of honey are: Côtes-du-Nord, Ile-et-Villaine, Eure-et-Loire, Marne, Cher, Finistère, Var, Loire-Inférieure, Loiret, Aisne, Somme, Corrèze, Morbihan, and Isère. The French colonies of Algeria and Madagascar also produce the article.

"French imports of honey in 1912 net 2,825 metric quintals (metric quintal=220.46 pounds), derived principally from the following countries: United States, 595 quintals; Haiti, 967 quintals; Mexico, 436 quintals; Italy, 180 quintals. Net exports were 11,377 metric quintals, principally to Netherlands, 4,103 quintals; Algeria, 3,316 quintals; Belgium, 1,623 quintals; Germany, 1,480 quintals; and Great Britain, 556 quintals.

"From the foregoing it will be noted that, with the exception of Haiti, France imports more honey from the United States than from any other country, and that almost one-third of the French honey exported is shipped to the Netherlands.

"The price of honey in the French market varies slightly according to the quantity and quality of the season's crop, though the quotations rarely fluctuate to a degree exceeding \$1.00 per 100 pounds. The wholesale price for honey at the beginning of January, 1914, in barrels or tin pails containing 25, 59, 100, 150 kilos (55.11, 110.23, 220.46, or 330.69 pounds) is 110 to 120 francs (\$21.23 to \$23.16) per 100 kilos. Honey at this price, and sold in bulk, is not of a very delicate flavor, nor does it possess the taste which is characteristic of the product of the hive. A considerable better grade, however, can be obtained at 150 francs (\$28.95) per 220.46 pounds. The finest quality is sold in tin boxes or cans containing 5 kilos (11.02 pounds) at 1.90 francs (\$0.37 per kilo 2.2 pounds). This honey is of grayish color, opaque, and thick in consistency. Transparent, or clarified honey is sold in glass jars containing half a kilo. Its color is similar to golden syrup, but its flavor is inferior to the semi-solidified, or opaque, honey, which is usually sold as "Honey of the Alps."

Judging from the quotations recently communicated to the consulate at



Havre by an American dealer in this article, honey from the United States, or from the Dominican Republic, from which the market draws a large supply, can be shipped to France and sold at a profit at prices much lower than those for the French product.

The United States enjoys the minimum tariff on honey imported into France, and the same tariff also applies to honey coming from the Dominican Republic and Haiti, whether shipped direct from the West Indies or via the United States. The French customs duty (minimum) is \$1.75 per 100 pounds net on pure, natural honey, and \$2.89 per 100 pounds net on imitation honey, or honey mixed with products containing sugar. The foregoing rates apply to merchandise imported directly to a French port. If imported via another European port or country there is a surtax of \$0.3152 per 100 pounds. In making offers to the trade, however, it is unnecessary to quote honey duty paid. Quotations should be made c. i. f. Havre.

Besides the honey prepared for table use, the article is employed extensively by the manufacturers of gingerbread. This is made in large quantities in Lyon, Reims, and Dijon, France, in which cities the United States has consular representatives, from whom names of the principal consumers and buyers can be obtained. [The names of all the importers, as well as those of the wholesale grocers, handling honey in Havre may be had from the Bureau of Foreign and Domestic Commerce.]

**A New Organ for Beekeepers in South Africa.**—Some time ago the South African Beekeepers' Journal was discontinued, and for a time the association was without an organ. They have lately arranged with the Farmers' Weekly, of Bloemfontein, to carry a beekeeping department, and to act as their official organ. Mr. S. L. Northcroft, secretary of the association, edits the department.

**Death of Major Merriam.**—Major G. F. Merriam, who for years was one of the largest beekeepers in southern California, is dead. Mr. Merriam was run down by a street car in Los Angeles, where he has been living for the past few years. The accident occurred on Jan. 24. After lingering for a few days in a hospital, the aged beekeeper succumbed. Mr. Merriam was intimately associated with the older beekeepers of California, being active at the same time as was John Harbison.

**Jin Sano.**—Mr. Jin Sano, whose death was reported in our July issue, and whose picture we here reproduce, was born at Shimokawairi, mura Aiko-gun, Kanagawaken (near Tokyo), Japan.

Mr. Sano's family is one of the richest and oldest, as well as one of the most influential in the county of Aiko, Japan. He was very fond of outdoor sports of all kinds. He admired ath-



THE LATE JIN SANO.

letics, was a good fisherman, and a famous shot and hunter. A few years ago some complications set in, affecting his spine, and after spending many months in the University Medical Hospital at Tokyo, he returned home in a weak and unhealthy condition. He took up beekeeping to keep himself busy, and in spite of a few unsatisfactory experiments, he became more interested in the subject, and decided to make a complete study of it. Only modern methods were to be used.

He came to the United States for the purpose of spending two years with beekeepers, and also to continue his studies of bees and learn more of the present methods. On account of his weakened condition, he was not able to carry this plan through, and reluctantly returned to Japan. He read bee lore with much satisfaction, and was on the lookout for anything that would aid him in learning about the habits as well as the improvements of his bees and stock.

His keen sense of learning and his

close application to the needs and requirements of each hive, soon gave him a practical knowledge, while the bees responded with their usual adaptiveness to any assistance given them, and rewarded him accordingly.

Mr. Sano was only 27 years old. Through his death Japan has lost a valued citizen, the beekeepers, especially those who were in touch with him, an earnest worker.

Mr. Noborn Sano has taken up his brother's apiary, and we trust he will be able to push forward into the bee business and fulfill the advances made by his deceased brother.

**Not Foul Brood in South Africa but Bee Pirates.**—In South Africa there is no foul brood. At least that is the report of Mr. Northcroft in the Farmers' Weekly. In order to keep out this dreaded pest, the beekeepers have succeeded in having passed a law which

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prohibits the importation of any honey whatever. Nor can beeswax and comb foundation be shipped into the country under the same regulation. They, therefore, feel themselves very safe.

Yet South Africa cannot be considered a modern Utopia in the beekeeping line in spite of the absence of foul brood. Thirty pounds of honey per colony is considered a good harvest, but this is in part made up by the fact that the price of honey ranges from 20 to 30 cents per pound.

Then they have bee pirates. Probably some of our readers have never heard of these insects which were described in our April number for 1913. It seems that there are only two ways to get rid of these pests. One is to catch each individual insect with a butterfly net; the other is to place water covered with paraffin in a white dish in front of each hive. The pirate is attracted not by the water but by the white spot.

The following on bee pirates by G. S. Oettle, in the South African Poultry Magazine for November, may be of interest:

"These pests are hard at work, and we wish that an easier method of extermination were available than that at present in force. If you realize what a devastating effect the presence of these insects has upon colonies, you will appreciate these lines. Last week we found no less than three hives decimated by the attacks of these insects. We sat for 20 minutes in front of another and counted no less than 27 bees carried away by pirates. This number does not include those caught in the grass which surrounded the hive. One significant thing we noticed and that was that the pirate seemed afraid or unable to tackle the bees while they remain stationary or ran about on the alighting-board. It was heart rendering to see how the pirates enticed the bees into the air to their destruction.

"The 'saucer' remedy is voted a

success by some and a failure by others, a great deal depending upon the actual position of the saucer containing the water covered with paraffin. One method of relief, however, has been proved a moderate success, and that is to darken the entrance of a hive by providing a shade-board not more than 2 inches above the entrance and making it extend at least 8 inches in front of the alighting-board of the hive. The entrance-board should be about the same width, but rather narrower so that the bees can fly in and out from a more or less shaded place.

"Experience has shown that the attacks of the pirates are usually at those times of the day when the sun is shining brightly and casting deep shadows, and it has been proved that these insects avoid shadows as much as possible. The bees by this method do get a chance. I should be glad if other beekeepers would make a trial of this method of protecting their bees from the onslaughts of these enemies to the industry."

**Death of F. B. Cavanagh.**—We regret to have to inform our readers of the sudden death of F. B. Cavanagh, which occurred at Hebron, Ind., on Feb. 12. Mr. Cavanagh operated over 500 colonies of bees, and was a wide-awake bee-keeper. He was yet a very young man, advancing rapidly in his chosen profession. He was a director of the National Beekeepers' Association, and had been chosen by the Chicago-Northwestern Beekeepers' Association as delegate to the National convention, recently held in St. Louis. Our sympathy goes to the bereaved wife.

**Correspondence Course in Beekeeping.**—The College of Agriculture of the University of California, located at Berkeley, announces a correspondence course in beekeeping to be known as Course 15, open to applicants any time after Feb. 15, 1914. Following is a de-

scription of the course as given in the College Circular No. 113, prepared by C. W. Woodworth, Professor of Entomology:

"It is the aim of this course to cover actual work with bees, giving directions whereby students can discover by observation the significant facts regarding the structure, habits and life-history of bees, and particularly those facts most related to the production of honey. The course is a practical one, dealing with the production of both extracted and comb honey. The student should learn from it enough to enable him to handle bees intelligently. The aim is to have the student actually study the bees, rather than study about them."

Any one interested in taking this matter up should write to the Division of Agricultural Education for registration blank and copy of the circular.

**Second Annual Report of the Iowa State Bee Inspector.**—The second annual report of the Iowa State Bee Inspector for 1913 is ready for distribution. Copies may be obtained by those interested by addressing the inspector, Mr. Frank C. Pellett, of Atlantic, Iowa. The report gives a mass of very reliable and interesting information which should be in the hands of every Iowa beekeeper at least. We can give but a short summary:

According to the last census of the United States, Iowa was fifth in point of value of bees on farms; other States with greater value ranking in the order named: California, Texas, Missouri, and New York. When area is taken into consideration, however, only one State, New York, shows greater value of bees.

An annual appropriation of \$2000 has been provided for inspection work in Iowa. This, as a matter of course, is insufficient to permit of thorough inspection. The efficient inspector believes that the greatest good can be accomplished by extensive educational work through the State college, and by answering correspondence of beekeepers who require assistance. The office of bee inspector has been given as wide publicity as possible through the papers of the State, with the result that a large amount of correspondence is carried on directly with the beekeepers.

Mr. Pellett, with two assistants, has also been in the field inspecting wherever possible, attending to the most urgent calls first. The following is the result of the personal visitation of the three inspectors:

Apiaries in which disease was found...	140
Apiaries visited.....	311
Total number of colonies.....	6,973
Number of diseased colonies.....	483
Number treated by inspectors.....	52
Number destroyed.....	32

A considerable portion of the whole number of 483 diseased colonies have been treated by the owners under direction of the inspectors. A number were also destroyed by the owners.

This is followed by a summary of the laws in Iowa, applying to bees and bee-diseases; a description of the dis-



HERMAN RAUCHFUSS AND SON IN THE "BIG SNOW."



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eases which threaten bees, the sources of contagion, and the methods of treatment combined with large pictures of foul brood and moth combs, and a map of the State of Iowa, showing in what counties the diseases are prevalent. There is also a list of Government, State, and other publications pertaining to bees with the places of publication, etc.

The second part of the book is devoted to papers read at the meeting of the Iowa association held in Des Moines in December; a brief summary of which was given in our last number. Any one interested in sweet clover should not fail to read the article, "Instructions for Sweet Clover Growing," by Frank Coverdale, one of the best known authorities on this subject.

Other subjects treated are "Treatment of Disease," "Helps and Hindrances in Dealing with Foul Brood," "Advertising," "Marketing the Crop," "Selling Honey Direct to Consumers," "A Season's Work," "Making Increase," "Exhibits," "Increasing the Consumption of Honey," "Report of the Secretary," "Comb or Extracted Honey?" and the "Beekeepers' Legal Status."

If you want to be imbued with genuine beekeeping inspiration, do not fail to read the article by Hamlin B. Miller entitled, "Beekeeping as a Side-line and the Fun of the Thing;" a small extract from which appears in Miss Wilson's Department in this number.

**Colorado's "Big Snow."**—You might be interested in the way some of our beekeepers had to do soon after the "Big Snow" that we had on Dec. 4, 5, and 6, 1913, when we had a snowfall of 47 inches, which was followed later by a snowfall of 10 inches, making it impossible to get about the country excepting on snow shoes and skis. The bees being buried under such a great quantity of snow, in some places having stores which made it rather doubtful whether they would get through the winter satisfactorily unless they had an opportunity for frequent flying, it was thought to be necessary to shovel them out and give them an opportunity

to fly as soon as the weather turned mild.

The two pictures represent Herman Rauchfuss and his eldest son, Frank, going to their out apiaries on skis, for the purpose of digging out their bees.

They are pulling a sled along carrying their tools and overcoats. This was rather a novel experience to all of us. Now most of the snow has disappeared and the bees do not seem any the worse for it.

FRANK RAUCHFUSS.

## BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

### Ventilating Comb-Honey Supers

On page 30, Bell Bros. say: "If we ventilated our comb-honey supers we would have all short-weight sections." One wonders whether that opinion is based on actual experience or upon mere supposition. At any rate we know from actual experience here that with 5 or 10 times as much ventilation as given by Bell Bros. with their  $\frac{3}{8}$ -inch entrance we have well filled sections. No doubt the statement by Bell Bros. that "the cause of the bees finishing the outside of the super before the inside is the heat" is correct. In other words the heat is so great that there is delay in finishing the central sections. If, now, we should close down the ventilation, making the heat still greater, would it not make matters worse? So long as ventilation gives us a crop so satisfactory in quantity and quality as the crop of 1913, we are not likely to ventilate less.

### How His Wife Helped Him

Beekeepers do not always give full credit for the help they have from their wives. Hamlin B. Miller is an exception. In a paper by him published in the report of the State Bee Inspector of Iowa, he says:

"Now while clipping these queens, my wife as usual got busy helping (?). I set a cover loaded with bees against the fence behind the hives. She took a seat on a pile of bricks near by, close

by the cover, with her dress comfortably spread out. Bees, I have discovered (and so has my wife) always travel up and not down. It was not very long until I heard a cry of surprise: 'I'm stung.' Well, she was, too. Infection set in, and after the physician had discontinued his attentions, I was stung—for \$6.50. The super of honey I took off at that time sold for \$6.00. The doctor overshot the mark just 50 cents, but he succeeded in getting it all for that time. But in spite of her many experiences, she still persists in running out every time I monkey with those bees, and makes me as much bother to keep her off the job as any 'fool bee' that ever endeavored to attract all my attention."

### Recipes from a Subscriber

NEW ENGLAND DOUGHNUTS.

One cup full of honey, one cup of milk or water, one teaspoonful of salt, three level teaspoons of Royal baking powder and a sifting of nutmeg. (They can be made with sour milk and soda equally well.) I do not use a cutter, for then so much of the dough must be handled over, I mix it fairly hard so as to roll it well, and then cut with a knife into about four strips, and take each strip and cut off inch strips and make either twistors or rings by bringing the ends together. Have them all made out before commencing to fry.

FOR A COLD JUST COMING ON.

One tablespoonful of honey in a cup of hot water, with a sprinkling of cayenne pepper just before going to bed.

It is a successful remedy, as we and our neighbors can testify. One of our neighbors has a boy, and she never allows him to have sugar in any form, but honey in the place of it. He is a fine lusty, bright-eyed boy of 10 months.

Arden, Neb. EMMA S. MILLS.

Your neighbor is a wise mother. If more mothers knew the value of honey as compared with sugar, it would be better for their children. That lusty bright-eyed youngster is in company with Dr. Miller, for he makes a practice of using honey in place of sugar in all hot drinks.

### A Foul-Broody Apiary—Catching Swarms With Traps

I am enclosing a view of an apiary where foul brood is said to be; another of "a boy's beginning." He



GOING TO THE APIARY ON SKIS.



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commenced with one colony and is catching more swarms from buildings with traps. I helped him one day get three swarms, the first one on a walnut tree. I had six combs. The second was in the roof over some blooded horses, and the owners had a time until we got the bees away. The third was



WHERE THEY HAVE FOUL BROOD.

in a barrel a man had bought. Before he could use it the bees had gone into the bung-hole. The barrel stood by the kitchen door.

Goleta, Calif. (Mrs.) LUCY SEXTON.

That picture, "Where they have foul brood," with surroundings all grown up with weeds, looks like a favorable place for the disease, where it is not likely to be interfered with until it has completed its deadly work.

## A Successful Lady Beekeeper

Under this title, Geo. W. Williams, the man who shakes bees to make them work, says in the Beekeepers' Review:

"It remains for a little energetic lady to show us how to do it successfully, secure a good crop of honey every year, and to winter with practically no loss whatever, winter after winter. In fact, if she loses more than one it almost breaks her heart. Frequently she goes through two successive winters without losing a single colony. □

"I am going to call her Mrs. Smith, as that is not her name and will do as well as any other. She lives in town, and like the roseate 'ads' we are seeing less of lately, she keeps her birds all on one city lot. She has about 100 colonies, spring count, and she uses 100 more hives in her system.

"She clips all her queens in the spring, thereby 'shaking up' the colony and inducing prolific brood-rearing. She allows her colonies to swarm naturally. (I am not defending this part of her system, but she does it successfully.) She hives the swarm on the old stand and moves the old hive a little to one side, with the entrance turned slightly away.

"All the supers are placed on at the proper time, and the old colony is allowed to rear a young queen if the stock is satisfactory, and if not it is supplied with a virgin or a cell

from good stock. When this queen begins laying, supers are given as required, and all the honey possible is secured from both colonies in the ordinary manner.

"When the supers are all off, and before cold weather sets in, the two colonies are united by shaking them together, after removing the old queen, which is readily found by reason of having been clipped, and all the honey crammed into the one hive, leaving only one comb in the center, partly

empty, for brood rearing.

"The shaking again stimulates brood-rearing, and by winter a fine colony of young bees are ready for their long nap. (In uniting bees by shaking, she has found that it can be done successfully, even in a dearth, if frames are shaken alternately from each hive and the whole manipulation is performed late in the evening, so that the bees get acquainted before morning.) She winters her colonies outdoors with hay cushions over the colonies."



A BOY'S START IN BEES.

## BEE-KEEPING IN DIXIE~

Conducted by J. J. WILDER, Cordele, Ga.

### Comb vs. Extracted Honey

Many beekeepers are "on the fence" as to what kind of honey to produce. It is not so hard for the beekeeper who is increasing his business to decide, for he is buying supplies right along and can use his discretion.

But the beekeeper who has all the bees he wants and equipment necessary, does not know whether to make the change. This of course is a question every beekeeper can best decide for himself. But in the way of throwing light on the subject, let me say that if all the surplus honey is of good body, flavor, color, etc., and very slow to granulate, it would be more profitable to produce extracted honey because such an article would be best thus put on the market. But if the honey is a little off in body, flavor or color, it would be best to put it on the market in the comb, for it would keep better in this form, and the taste and color of it would not be as objection-

able to the consumers as if it were extracted and if sold in that way.

Extracted honey has become so well known that it will sell as well as comb honey on most markets. From the standpoint of labor and investment, it is best to produce extracted honey when, as stated above, the article justifies. This has been my experience and that of Mr. T. W. Livingston, of Leslie, Ga., who has had much experience in producing honey in both North and South. He says he can make more money producing extracted honey at 6 cents per pound than comb at 10 or 11 cents. But the honey he produces is of extra fine quality.

### The Price of Supplies

The prices of raw material suitable for making our supplies has advanced considerably in the last year, as has also the price of labor, etc., and as a natural consequence the prices had to

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be raised on the finished article.

Many beekeepers will think that the prices are too high, and on this account will reduce their orders for the season. I don't think this should be the case. Beekeepers should go right on expanding their business in the usual way, for supplies will never be any cheaper, and bees are increasing in value each year, and the demand for them is growing. But this rise in the price of supplies hits the comb-honey producer the heaviest blow, because so much of his supplies consist of sections, shipping-cases, etc., which go with the crop of honey; while the chunk-honey and extracted-honey producer retains his supplies and the cost of suitable retainers for the marketing of such honey is the only added expense.

## Wants to Start Right

MR. WILDER:—I am a beginner in beekeeping, and want to start right and produce comb honey for home use and for local market. Any suggestions will be greatly appreciated.

Baldwin, Ga. GRESHAM DUCKETT.

ANSWER.—I would produce chunk honey, using the regular shallow extracting supers for storing room, and the regular 8-frame dovetailed one-story hives for brood-chambers, and would order not less than two supers for each colony. Three is better than one. Use full sheets of foundation in the frames in the supers, and 1-inch starters in the frames in the brood-chambers as long as you practice natural swarming, but use full sheets when you resort to artificial swarming. It would be best to use queen-excluders between super and brood-chamber in order to keep the queens below so the new combs above will not be soiled by brood-rearing. You must have your honey as attractive as possible in order to sell it and obtain the best prices.

You can sell the honey in frames and let the weight of the frames go in as honey. Or if your customers care to return them, you can allow them the same price per pound as you charged for the honey. Having plenty of supers, I would remove honey only as I sold it during the winter months.

In the busy season watch the supers, and as soon as the bees get the super next to the brood-chamber about one-third full, raise it and place an empty one beneath. In this way you will supply the bees with plenty of storing room, and many times you will get two supers filled as quickly as one. Start selling new honey as soon as any frames are well filled and capped over.

## The Brood-Nest

Just at this time of the year the brood-nest of the colony is a very important factor to the beekeeper, and should be examined as soon as the first warm day comes. See what the conditions are, and give the attention needed.

When bees are allowed to dwindle in the fall, during winter they cluster up in the supers where there may be a little honey. Sometimes they cluster in empty combs left in supers, carry honey up from below, and, as a nat-

ural consequence, start rearing brood in the super, totally ignoring the brood-chamber. Medium sized colonies will do this occasionally; the brood-nest may be divided with part of the brood below and part above. In such cases the super containing the brood should be placed under the brood-chamber. The queen will then go above as soon as she gets very active; this super can be removed later.

In cases where bees are run for extracted honey solely, with full-depth frames in the supers, and where they have established their brood-nest above, all the combs of brood thus occupied should be moved below or the bodies interchanged. Keep the queen below until she has the body of the hive filled with brood. She can be allowed to go above later if so desired.

## The Prevailing Prices of Honey

Honey has not risen in price as it should along with other articles of food. If such had been the case, beekeeping would be on a much better financial basis today. No one is responsible for this but the beekeeper. Now that the prices of bee-supplies have advanced so much, we should raise prices this coming season. I am in hopes the price will advance not less than 2 or 2½ cents per pound. If there is some general understanding about prices among us, and especially those who are great producers, there will surely be a change in our favor. For with the lack of this understanding, we will not have uniform price. Let the slogan of better prices for our honey this season spread as far as possible from beekeeper to beekeeper.

As I traveled from city to city last season selling honey, I found nice comb honey that was sold and delivered by the producer for less than 8 cents per section, and small shipments

made. Lots of it was shipped over 500 miles, and it was packed in nice shipping-cases and carriers. It was retailing at less than I was offering mine at to jobbers. I held to my price and sold all I produced. Brother beekeeper, let us line up on this point of market.

## Losses to Beekeepers Through Floods

It is with regret that we learned of so much loss to beekeepers in Texas from floods. Among those mentioned is Mr. Polk, of Belton, who not only lost his bees but his family as well. Mr. Scholl, of New Braunfels, lost heavily. Several of his apiaries, together with supplies, etc., were swept away by the water.

I am sure all beekeepers join me in extending sympathy to all who have sustained losses. Editor Root, in commenting, says: "When we read the telegraphic reports of the floods in Texas, we wondered how our bees on the Apalachicola river would fare, because they are on platforms, but slightly above high water level. Fortunately, however, the floods did not visit that section." Fortunate it is for many of us that they did not, for there are many bees in this section similarly situated.

The Texas flood should be an example for us. I have seen hundreds of colonies in the swamps of the Apalachicola, supported by frail scaffolds, and barely above high water mark.

Mr. R. W. Herlong, of Ft. White, Fla., some years ago located an apiary in a low district which was supposed to have been a pond at one time, although water had never been known to collect there to any extent. Some time after the bees were located a flood came, the pond was filled, and the bees were destroyed before they could be moved, although the hives, etc., were intact when the water subsided. We cannot have our apiaries placed too safely

## FAR WESTERN BEE-KEEPING



Conducted by WESLEY FOSTER, Boulder, Colo.

## Altitude and the Alfalfa Honey Crop

Is it possible that alfalfa in high altitudes does not yield nectar? What is the cause of the poor yields of alfalfa? —A SUBSCRIBER.

There is no doubt that alfalfa yields less nectar at an altitude of 8000 feet than it does at 4000 to 6000 feet. The San Luis valley is an example of this. This valley lies at an altitude of 7000 to 8000 feet, I believe, and while alfalfa and sweet clover grow very well, the beekeeping industry has never cut much of a figure there, although there are some bees kept. Another district comes to mind, and that is the upper Arkansas valley around Salida, Colo. Large fields of alfalfa are grown, but bees are not kept there by any one in a commercial way, as is true in the lower

end of the valley, from Pueblo to the Kansas line.

There is no evidence that I know of that would give ground for the belief that altitude has anything to do with it except as altitude affects the temperature. The nights are often cold and frosty, and the days do not get so warm in the higher valleys and mountain parks as is the rule in the lower valleys.

It may be set down almost as a rule that the West that depends upon alfalfa and sweet clover for surplus honey has its largest crops when the season is hottest with abundant water for irrigation, and two to three good rains in July and August to put new life into the sweet clover growing beside the roads and in waste places inaccessible to irrigation water.

have had considerable experience



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with failures of the honey crop from alfalfa and sweet clover. Sweet clover may be depended upon more than alfalfa. We are finding out more every year it has less enemies and will withstand drouth better. Alfalfa seed crops and honey crops as well have been destroyed by thrips, very small insects that live upon the pollen and delicate parts of the flower. Some seasons they become so thick in the blossoms that they destroy the reproductive organs of the flower, and of course the flower can secrete no nectar when the delicate flower parts are being devastated by a hungry hord of 40 or 50 little critters called thrips. I have shaken 40 or 50 of these little mites from a single alfalfa blossom. The alfalfa at the time was in nearly full bloom, and still the bees were scarcely making a living, and could be easily induced to rob. A farmer living near the field where I found so many of the thrips, was trying to raise some seed from a special variety of alfalfa, and his endeavor failed, probably on account of the prevalence of the thrips.

Grasshoppers, when numerous enough eat off the tender leaves and blossoms, and some years cut down very materially the yield of alfalfa honey. Grasshoppers will not eat sweet clover until after most of the alfalfa within reach has been first consumed. Like cattle and horses they have been starved to it.

There are probably a score of causes affecting the yield of alfalfa honey among which I might mention too much pasturage, winter and spring freezing, too much water or too little, the forming of a "water table" 6 to 10 feet, more or less below the surface of the ground by irrigation farther up on higher ground. This has been given as the cause of the failure in alfalfa seed growing in the Arkansas valley. The alfalfa roots reach down to the water table, and the plants get too much water for seed production. Seed production seems to depend upon a withholding of moisture at the right time to stunt the growth and turn the thoughts of the plant to reproducing its kind before it dies of drouth. The causes producing abundant crops of seed also seem very favorable to honey production. When the seed crop is good the honey crop is good. When the honey crop is good the alfalfa seed crop may be good and it may not.

I have mentioned spring freezing, and in my opinion there is nothing so disastrous to alfalfa honey secretion as a late spring freeze that freezes

the young plant when it has attained a growth of a few inches to a foot.

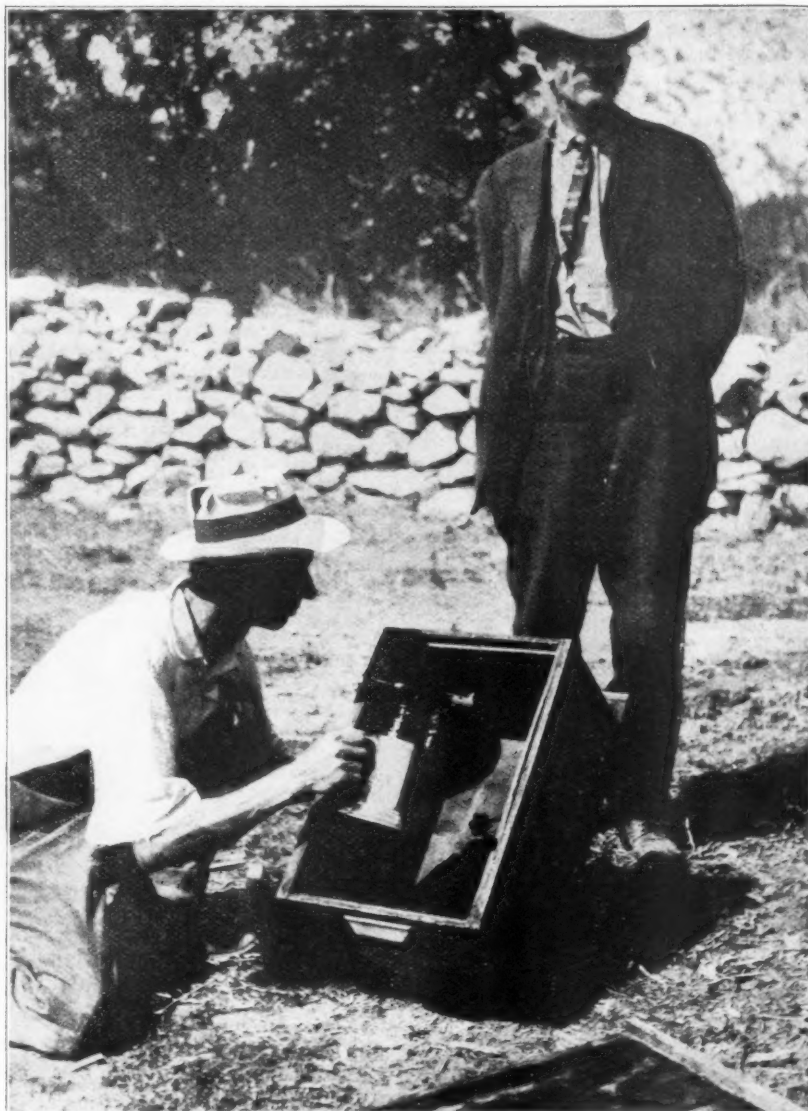
As to alfalfa plants exuding a sap or giving off a secretion similar to honey-dew, I never saw any of it, nor heard of it before. It would not be very difficult to find this out by observation if there ever is such a thing as alfalfa plants furnishing a honey-dew.

it becomes necessary in such instances to combine something else with it in order that profitable employment may be provided.

### COMBINED WITH POULTRY.

Engaging in poultry raising as a lucrative business in addition to beekeeping has been mentioned before by me. As a "hobby" this side-line has proved profitable enough, and from the experience I have had, better results and greater profits might have been obtained if a little more care and timely attention had been given the flocks. When considered as a business proposition this becomes absolutely necessary, as the fowls must pay returns on the investment. Too often beekeepers are insufficiently informed, and in many instances unpractical in their work with poultry.

The construction of simple but serviceable poultry houses and other necessary appliances is too much overlooked. A very common mistake is



MR. OLIVER B. FINN, OF SILT, COLO., DISINFECTING A HIVE-BODY WITH A BLOW TORCH  
Mr. J. H. Gardner, County Apiary Inspector, standing.

## SOUTHERN



## BEEDOM~

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

### Bees, Poultry, and Fruit

I have always advocated specialization in any line of work, when this can be done advantageously. I believe in applying it to beekeeping. Instead of

keeping more bees only, as has been advocated for many years, I believe in keeping better bees and keeping them better. But not every beekeeper is so favorably located as to put extensive beekeeping into practice. Therefore



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that of investing too much in unnecessarily expensive and cumbersome buildings in which to house small flocks of birds. The interest and profits on the investment cannot be obtained from the building and the equipment, but must come from the poultry kept. Instead of putting \$30 to \$50 in a poultry house, and \$10 or \$20 in chickens, I should reverse these figures, and invest in more and better poultry, and keep them in simple and cheaply constructed but serviceable houses. Especially applicable is this to the South.

### PURE-BRED POULTRY BEST.

Another mistake frequently made is that of trying to get good results with "scrub chickens." I do not believe in mongrels, especially in poultry. Take a look at a lot of chickens of all colors, some "spotted," "brindle," and "striped" ones, a few yellow, red, black, and white birds. Then place these besides a flock of pure-bred fowls and notice the difference. Nothing appeals to me more than such a flock on a rich green lawn or a green range especially provided. The owner of such not only takes greater pride in them, but gives them more care and attention and gets better results. The advantages of keeping pure-bred stock and being able to obtain larger profits for eggs and stock are so much greater that it is a wonder mongrel chickens are tolerated.

### ADD FRUIT ALSO.

The combination is hardly complete unless fruit growing is included. The small beekeeper who cannot engage in extensive beekeeping should so locate that a combination of these three, bees, poultry, and fruit may be kept profitably.

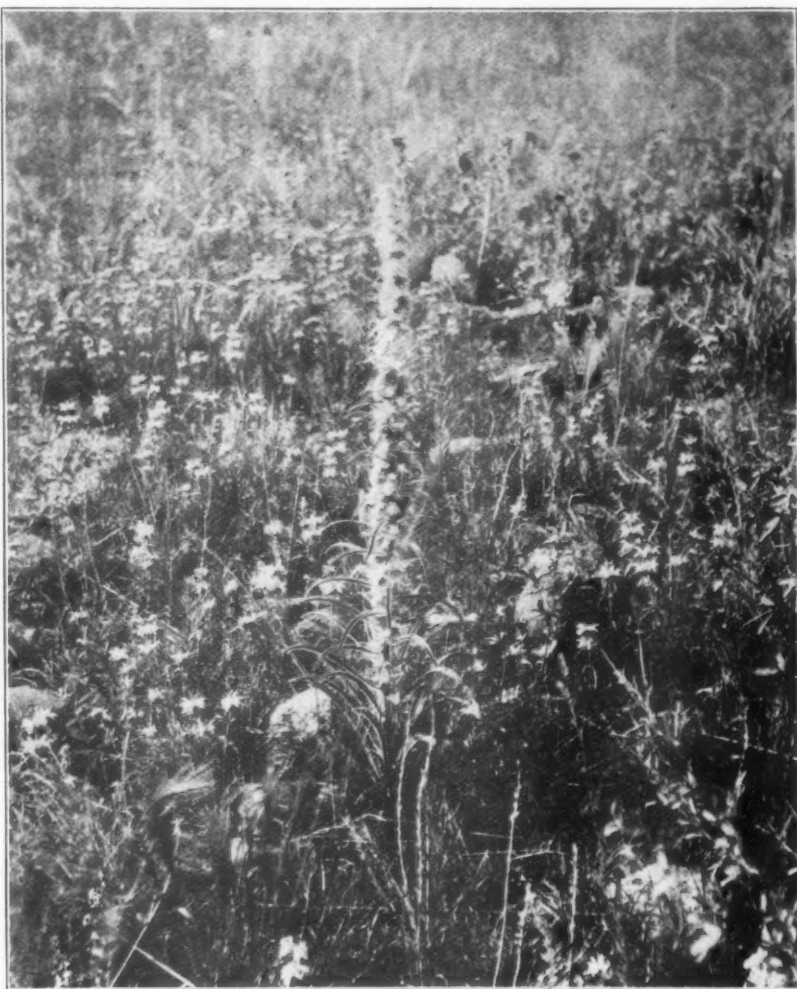
### POULTRY IN THE ORCHARD.

The scratching hen is the laying hen as a rule, and such a one is of untold value in the orchard. Thousands of destructive insect pests can be destroyed by keeping fowls in the orchard. Besides, hen-house fertilizers are exceedingly valuable. They are scattered throughout the orchard while the birds have the range of the ground, and it is very little trouble to spread the hen-house cleanings in a proper manner also.

When arranging the orchard and the poultry houses and runs, these should be so provided that the fowls may be excluded during the ripening of fruit.

It is not wise to crowd too many birds into one house, and better results may be obtained by having smaller colony houses located throughout the orchard, so that the entire number of fowls kept may be divided into small flocks. It is not really necessary to separate the flocks by fences, although it is better. Besides giving better results this affords a better distribution of the birds over the orchard, and prevents the spreading of contagious diseases among all the fowls if an outbreak should occur in any one of the flocks.

In a medium-sized orchard the houses may be arranged close together near the center, with the poultry runs diverging from the central location. With the feed house in the center very



Horsemint and wild bloom made the desert beautiful last summer. We had more rain than was common.

little time is required to attend to the fowls properly.

### THEY DO NOT INTERFERE.

The fact that poultry can be attended to early in the morning and in the evening with the proper equipment, and that the orchard requires attention

only at certain times, leaves plenty of time to give the bees the best attention. When the beekeeper goes out to deliver honey, he can take along some eggs and poultry, or fruit of some kind, and return home with just that much more cash "to jingle" and feel merry over.

## CANADIAN



## BEEDOM~

Conducted by J. L. BYER, Mt. Joy, Ontario.

### A Hard Cold Spell

Up to Feb. 9, this winter was milder than the average here, but since then we have had weather direct from the North Pole. Monday, Feb. 8, it was zero; Tuesday, 8 degrees below; Wednesday, 16 below; Thursday, 25 below; Friday, 10 below; and this morning, Saturday, 14th, zero. Every day we have a stiff wind besides. It is the coldest week I have ever experienced. These are the days that go hard with bees out-of-doors, especially if the

"winter nest" is as large as some would have it. With a narrow rim of honey over the bees, stores become exhausted, the bees are unable to move the cluster, and they either die outright or gorge themselves with pollen and die with dysentery later.

There is very little snow around the hives, and I have been wishing they were covered entirely. The snow we have is covered with a hard crust; I could not shovel it around the hives or I would have done so. However, bees

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can stand wonderful extremes of temperature, and wherever they have abundance of good stores in the hive, I think they will winter all right unless the present arctic weather continues too long. But it is milder today, and a change is near, no doubt.

### The Iowa and New York Reports

Those are splendid photographs on the cover page of the February issue, and are valuable from an educational standpoint. The depressed cappings are shown so clearly, and other general characteristics of American foul brood so apparent that a greenhorn should be able to diagnose foul brood if he has a text book and pictures like that. I think it is the best photograph of foul-brood combs I have seen, and any beekeeper who is not familiar with this disease should keep the picture handy for reference.

I am indebted to some one for a copy of the annual report of the Iowa Foul Brood Inspector. These same photographs are shown there. Some time ago I also received a copy of "The Honey Bee," a bulletin issued by New York State, and edited by our friend W. D. Wright. It is a splendid work, the best in that line I have ever known to be issued by a State Department of Agriculture. Although somewhat tardy in acknowledging this booklet, my thanks are none the less sincere.

### Answer to Dr. Miller

On page 43 of the February issue, Dr. Miller seems to think that I infer that he has a better location for beekeeping than we have. No, Doctor, one year with another I do not think so, but every once in a while I notice that your honey flow will last for seven or eight weeks at a stretch, something I never knew here in Ontario from any one source. Clover rarely yields over four weeks in succession; in fact, in our immediate locality I never knew it to last that long. This past season was the longest in my experience, and it did not extend over that length of time, although in some sections of Ontario it did on account of more rain. Don't think for a moment, Doctor, that I am at all envious, for next to myself I can think of no one I would sooner see get a bumper crop than yourself. As to the "woman in the case," I accept all you say with this amendment: Instead of narrowing it to a "full-blooded Scotchwoman," include "German Canadians. Come to think of it, I know of a lot of women hustlers here in Ontario who are at least "half of the game" in producing the crops of honey, and for fear all have not German blood in their veins, I will insist that all "Canadians" be included when giving honor to the work done by the ladies.

### Changeable Weather in March

March is the month that gives us many changes of weather. Some of these changes are not pleasant, but I doubt if any other month gives us more real pleasure—pleasure being derived from anticipation. Bees wintered out-

doors generally have their first flights, and how interested we are in seeing their condition. The first birds arrive from the South, and the notes of the robin, the harbinger of spring, is sweeter than any music for months past.

The ice in the rivers breaks up, and the grass begins to show on sheltered banks facing south—all these signs tell us that summer is coming, reminding us of the promise that as long as the earth stands, seedtime and harvest, summer and winter shall not fail. Little real work is to be done in the apary in Ontario, and anticipation occupies our minds more than at other seasons of the year. Some years the weather is warm enough to allow scraping of combs, etc., but, as a rule, we have to wait until April to work comfortably in unheated buildings.

### Why So Many Swarms?

A subscriber from California states, on page 61, that he has in one season presumably caught 60 swarms by put-

ting out boxes in the trees for the bees to go into. This indicates one of many things, careless beekeepers, abundance of wild bees in the rocks, etc., and other reasons that might be mentioned. What is the correct solution?

### Wintering Out-of-doors

In February notes I mentioned having received a letter from a friend in Ohio under date of Jan. 7, which stated that they had 30 inches of snow. At that time we had but a few inches, and up to the present time we have had only a light snow fall. Under date of Feb. 7, this same friend writes that the snow is all gone and the bees have been flying freely for a week; in fact, it was so warm that robbing was attempted. Under such conditions one wonders why cellar wintering should ever be thought of. Surely, it must be easy to winter outdoors where bees are certain of cleansing flights in mid-winter. Or is there a possibility that the bees winter better outdoors in a locality where no days are warm enough for a mid-winter flight?

## CONVENTION PROCEEDINGS

### The Washington Meeting

The beekeepers of Washington State held their 20th annual convention at North Yakima on Jan. 7 and 8. It was the best meeting in the history of the association in the following ways: Numbers, enthusiasm, educational points, and good fellowship. The enthusiasm was at a high pitch all the time. Every paper and talk felt instructive, and every one had a brotherly feeling for every one else.

Among the visitors from outside the State were Mr., Mrs., and Miss Espy, of Iowa. Mr. Espy gave a talk on short methods of curing foul brood, which was well received. Mrs. Espy spoke on the subject, "Why women should be beekeepers."

Mr. Anson White told how he increased from 4 colonies to 29 and harvested 730 pounds of extracted honey. He believes in leaving a large supply of winter stores. Mr. White and Leigh Freeman, editor of Northwest Farm and Home, are the only remaining charter members of our organization.

All of the papers were full of wholesome instruction and created discussion, especially when the care of alfalfa and sweet clover was mentioned. In all, over 100 people attended. There were 80 at the banquet held the second day. The following officers were elected for 1914: E. E. Starkey, president; L. G. Simmons, vice-president; Gus Sipp, treasurer; J. B. Ramage, secretary.

The president, secretary, and C. W. Higgins were appointed Legislative Committee to draft a foul-brood law to be presented to the next legislature,

and to urge the passage before the members.

When the convention adjourned, the happiest bunch of beekeepers separated that it has been my lot to be associated with.

J. B. RAMAGE, Sec.  
North Yakima, Wash.

### Tennessee Beekeepers Meet

The 8th annual meeting of the Tennessee Beekeepers' Association was held at Nashville on Jan. 30, 1914, President J. M. Davis presiding. The president, in his opening address, urged increased energy in getting more members for the association, and suggested field meets during the summer to create added interest.

Dr. J. S. Ward, of Nashville, read a paper by his brother, Mr. Porter C. Ward, on "General Farming and Beekeeping Combined." Mr. Ward produced 10,000 pounds of honey in connection with his farm work during 1913 with but little help except during extracting time.

Mr. Ward's paper was followed by an address by Mr. L. F. Watkins on "Fancy Comb Honey in Spite of Foul Brood." Mr. T. J. Ayers and Sandy Ellis discussed the subject of control of swarming.

Dr. J. S. Ward gave a very interesting account of his experiences with foul brood as an inspector. He stated that it was surprising to note the number of colonies still kept in box-hives throughout the State. These, naturally, give but little surplus, and are the breeding place for foul brood.

If the box-hive could be eliminated it would mean a great gain for bee-



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keeping, as it would not only help check the ravages of foul brood, but it would increase the output of honey on account of the added number of colonies in movable-frame hives.

A great deal of discussion was provoked on the general subjects of "Wintering Bees" and the "Marketing of Honey."

The following officers were elected for the ensuing year: T. J. Ayers, president; W. B. Romine, vice-president; J. M. Buchanan, secretary-treasurer. Mr. J. S. Ward and J. M. Buchanan were elected delegates to the National meeting in St. Louis.

## South Dakota Convention Meets

The convention of the South Dakota Beekeepers' Association was held at Vermilion Jan. 21, 1914, and was a most successful meeting.

The following program was carried out, each number being freely discussed by the members present, and

good feeling prevailed:

"Bees on the farm," by Geo. [F. Webster, of Sioux Falls.

"Experiences and expenses of marketing honey," by W. P. Southworth, of Sioux City.

"Producing big crops of comb honey," by F. A. Dahl, of Gayville.

"Feeding sweet clover green and dry to stock," by T. M. Goddard.

"Treating foul brood," by Dr. E. A. Morgan.

"Does it pay to keep bees?" by Pres. R. A. Morgan.

"Extracted honey," Wintering bees," "Split sections," "Chaff hives," etc., were discussed.

It was decided to hold a picnic next summer at either Vermilion or Gayville; time and place to be decided by the president and secretary.

The next annual convention is to be at Vermilion early in December.

By a unanimous vote, the present officers were re-elected. R. A. Morgan, of Vermilion, president, and L. A. Syverud, of Canton, secretary and treasurer.

possible result of my investigations. For instance, I had wished to enquire into the advisability of making worker comb foundation with larger cells than are now made, because one of the French writers has for some years strenuously maintained that the natural comb of the worker bee is larger than commonly asserted, and that still larger cells could be made; that the bees produced in those larger cells are of larger size. I enquired into this question wherever I went, thinking that there might be something of value in it. The result was entirely negative. All that my enquiries secured was evidence that there is irregularity in the cells of the honey-bee, which we already knew, and that larger cells have little or no influence on the size of the workers. In some instances where cells are too far in excess of the worker size, drone eggs are laid in them. The standard worker cells have been variously estimated at 854, 838 (which is the figure arrived at by Mr. Langstroth) down to 736, to the square decimeter. We will refer again to this question later, for I obtained a number of expressions of opinion. Our host was prompt in saying that this matter had no importance, since even if larger bees could be produced, they would require more room, the number of them would therefore be less and the crop result the same.

We spent the time between showers in the fine park of which we give additional views in this number. They are all the work of our host himself, who is a splendid amateur photographer. We gathered mushrooms by the basketful, edible mushrooms which are very plentiful. We also gathered snails. We had never tasted of snails, and were rather prejudiced. But those shell snails are not any worse looking than oysters. They are eaten roasted in the shell, with a nice dressing and taste very good.

The following two days were spent visiting apiaries by the dozen. Getting up at 5 o'clock in the morning we went to Beaune, 30 miles away, in a spring wagon similar to the English dog-cart. They make those vehicles

## NOTES FROM ABROAD

### Our Visit in Burgundy

BY C. P. DADANT.

THE PART of our trip which I am about to describe has already been mentioned in the September number. But there is plenty left to tell.

We reached the home of the presi-

the good taste and courtesy of our host, when we inform him that a life-size crayon portrait of my father had been installed in the bed-room which we were to occupy. All our needs and the least of our desires were anticipated with similar foresight and urbanity.

It rained, the day following our arrival, and the projected bee excursions had to be postponed. We spent the time in discussing bee-culture. Before leaving home, I had prepared a memorandum book, with printed questions and blanks for the replies. This contained a hundred pages, and was neatly bound in leather. It proved very useful, but not so useful as I could have made it, had I known beforehand the



MR. CHAMPION, OF FRANCE.

dent of the Burgundy Beekeepers' Association, Mr. Champion, on July 23, just one month after leaving home. A most hearty reception was awaiting us. The reader may have a slight idea of



ON THE BANKS OF THE SAÔNE AT GERGY, FRANCE.



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AN EXPERIMENTAL APIARY AT GERGY, FRANCE.

altogether too heavy for the fine roads of Europe. Our light buggies, with wheels made of hickory wood, would create a sensation, for nothing as light is seen anywhere. The traveling carts of the peasants could carry a ton or more without breaking down, and do not wear out as our light rigs do. But what a waste of energy and horse flesh in drawing those heavy vehicles over those magnificent roads!

Burgundy is beautiful. Every road is lined with poplars or elms, well trimmed and kept under control. Rape, clover, the silver-leaf linden abound. The woods are full of flowers. Every forest is divided into a certain number of areas, and each is cut down in turn, retaining the finest trees for further growth. No cattle are allowed to range in the young timber. The result is a very thick growth of trees which permits the harboring of game. For that reason the wild boar is still to be found, just as it was in the time of Walter Scott's heroes. I was astonished to find that our host, who is 68 years old and weighs 240 pounds, was still an active hunter and fisherman. He gave us a sample of what he could do by taking us to the Saône river and there, from a little row-boat such as we have on the Mississippi, throwing a large "cast net" from his shoulder, while standing up at the stern of the boat. He caught a fine fry of gudgeons and a few American sunfishes which have lately been raised in French waters.

During the trip to Beaune, with our

host, we saw the silver-leaf linden in full bloom. It is much later than our Illinois lindens, but this spot is at the 47th degree while our central Illinois is at the 40th. Their hillsides are mostly in vineyards, and were it not for the pastures and meadows, there would be but little honey production in the mountain portions.

Up the hills we went, among the vineyards, till we reached the park and castle of Mandelot, the property of an aged retired merchant, Mr. Bouchard. While the old gentleman himself escorted Mrs. Dadant to the flower and vegetable gardens and to the hothouse, we visited the apiary from which the manager was extracting honey. They use the DeLayens hive; what we would call here a "long-idea" hive. It contains but a single story, with from 20 to 30 frames about 12 by 13 inches. They prefer this system on account of its simplicity. They have no supers. The honey is all extracted. It is re-tailed in tin pails and small earthen jars holding a kilogram or more. The kilogram is 2.2 pounds. We opened a 30-frame hive, every comb of which was full. The bees were mainly hybrids.

A magnificent lunch was served to us in the dining-room of the castle, from the products of the farm; milk, cream, cheese, butter, honey of course, fruits of every sort in spite of the short crop, and the inevitable and palatable champagne wine, with enormous home-baked cakes, served on a table 6 feet in width.

At Savigny, on the other side of the

mountain, we found more bees, and as hearty a reception. Mr. Vallot, located at this spot, is a manufacturer of beehives on a small scale. His apiary, on a steep hillside, is among the vines. Often the vines are trained on single stakes and rarely arranged in rows, for cultivation. Nearly all the tilling is done with the hoe or mattock. There does not appear to be any desire to save hand labor.

It would take too long to tell of all the apiaries which we visited during those two days. We have already spoken, in our September number, page 295, of our visit to Dracy and Chalon. We were feasted everywhere, rather too much. We had breakfast before starting at 5 o'clock, a lunch at 10, dinner at 1, another lunch at 5, and supper at our return at 8 p.m. Five meals, all but the first and last in different places! We were "going some."

During all this time the weather was cool, so cool that Mrs. Champion loaned some furs to my wife, to ride in the early morning. Furs in July! The air was bracing, the view beautiful. Those winding, smooth, white roads are lined with tall poplars. The little rivulets, flowing towards the larger Saône, among the fields, are regularly shaded with willows. The small fields, parceled out, all over France, like a lot of pocket handkerchiefs spread in the sun, are of various shades, from the deep green of the potato field, through the golden of the ripening wheat to the red of blooming clover, and the white of the buckwheat. And to still farther

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remove the monotony, here and there is a summer-fallowed land, or a rare neglected spot where the red poppy and the blue centaurea spread their contrasting colors.

But I am lingering too long. We must hasten to other scenes. Our next trip will run us clear into Switzerland, by way of Lyon and Albertville. On

the 29th, we took the train again. We passed down the Saône, through Villefranche, the home of the famous Vermorel, who invented the sprayer and nozzle known to horticulturists and vineyardists the world over. He has a large factory there. An hour later we were in Lyon, the silk center, and the metropolis of the Rhone valley.

ing or sweet gift, the cost, 40 cents, postpaid, is not prohibitive.

Not more than four or five sections should be sent together by mail. The increased weight causes more disastrous results if the package receives rough handling. If one wishes to send more than four sections, he will do well to send such by express. One of the best ways to send by express is to pack sections in a box in excelsior and tie a cloth or rope handle to the box. I have also tacked to the bottom of a heavy shipment shock absorbers made of burlap and excelsior. But if one is to ship more than two dozen sections, he will find that a barrel is the ideal package. The barrel receives a different sort of handling from the box. I have always had success shipping honey in barrels, even without excelsior beyond a layer at the bottom of the barrel. I have shipped as high as 180 sections in one barrel by express and over 200 by freight.

All the suggestions in this article have to do with shipping sections without the use of shipping-cases. If one is to ship the regular cases he had best use the well-known and well-tried methods now in vogue. My own trade is largely to the consumer, and for such there is absolutely no need of the regular shipping-case.

Norwichtown, Conn.

## "A Season's Work"

BY F. W. HALL.

(Read at the Iowa Beekeepers' meeting.)

**W**ISH to give you a "season's" trip through my bee-yard and get you back in time to take the evening train home. I will have to hasten and stop only at the important points of interest. Taking the bees out of the cellar may seem a very commonplace affair, but in reality it is an important proceeding. I have about 400 colonies in six yards. Each yard has a wintering cellar over which there is a bee-tight building in which the extracting is done, and in which the supers are stored when not in use.

When the time comes to get the bees on the summer stands, with the help of another man I spread four or five thicknesses of newspaper on the quilt and place the cover over the papers, stuff the entrance with fine blue grass or an entrance closer, except a small space, and with two hives on a "stretcher" or "carry-call," it is but a short time until we have them all on the summer stands. As we place them on the stands, if they appear too light or need any other attention, we place a mark or stick of some kind on the cover. After all are out, those having been marked with a stick on the covers are given a comb of honey from the honey-house, or adjusted according to their needs, when we are ready to drive to the next yard.

A few days later, when the weather becomes suitable, all are examined for queens and fixed according to what seems to be best for them; not forgetting to keep close watch for any sign of disease, sticking a small peg painted red into the ground at the left side of the entrance, where we find suspicious



ANOTHER EXPERIMENTAL APIARY AT GERGY.

## CONTRIBUTED ARTICLES~



### Comb Honey by Parcel Post

BY ALLEN LATHAM.

**I**T IS PERFECTLY feasible to send small shipments of comb honey by parcel post, if the limited experience of the writer is reliable. As with eggs, the article must be perfect and a special method of packing followed. To be sure, I have sent only a dozen or so of packages of comb honey through the mails, but I have yet to hear of one of them being injured *en route*.

Two styles of packages have been tried. At first the sections were packed in tin pails with excelsior. This is easy but rather expensive. Only three sections can be put into a 5-quart pail. I have to charge \$1.00 besides the postage on such a package. Then single sections in smaller pails were tried. Postage on such in 1st and 2d zones was 6 cents. These were sent for 40 cents including postage. Seeking a cheaper package I tried pillowing a section with excelsior. This method appears to work excellently, and a section thus packed will fall to the floor from a table without injury. From 1 to 2 inches of excelsior is put all about the section and the whole wrapped

securely in strong paper.

Sections to be sent by mail should be chosen with care and prepared in a special way. No section which is not solidly filled with honey should be chosen. Those with rows of sealed cells next the wood are best. The section should first be wrapped in a good quality of paraffin paper, then slipped into a carton. The carton is then wrapped in a good quality of paper, care being used that in case of breakage no loose joints be left for escape of honey.

A bed of excelsior is prepared about 10 inches in diameter, the section laid upon this and then covered with a similar blanket or bed of excelsior. Strings are then tied about the excelsior to hold it in shape while it is wrapped. One should not trust such a package with carelessly tied and insufficient string. String this package with at least two windings each way, one winding a little way in from each corner. Bind all windings together, and then if the paper gets torn the package will not become disintegrated.

This method of wrapping calls for a charge of 10 cents per section, involving labor chiefly. As most of such sections are sent out by the purchaser to a friend, either as a Christmas offer-



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cases, and in front of the left side for those found diseased. If treated, I move the peg to the center of the entrance, and if after a week or so they show no sign of disease, move the peg to the right of the entrance and add one peg for each examination made thereafter until fall. When it no disease shows, we remove all pegs.

Previous to the honey flow (clover) I keep going the rounds of the yard looking for their needs, spreading their brood-nests as their condition and the condition of the weather will permit, adding super room as needed from time to time, and equalizing by the exchange of brood-frames until about 18 or 20 days before the expected end of the honey flow. By this time most of the colonies are fairly "boiling over" with bees, and all drone-cells are filled with larvæ. Some of the most forward colonies are building queen-cells, and now it is time to begin the dethroning operation. With a boy to handle the smoker, and a man to help look for the queens, we start in a yard, killing all the queens that are two years old, and all the others except what are needed to fill hives empty from winter loss or to increase it more are wanted. Perhaps a colony may be in such condition that it may run through the season with little chance of swarming. This one is given more room if needed and passed by.

With this system of handling the swarming problem, it is necessary to have some easy method of record to keep an account of what has been done from time to time in the yards. Book records do not appeal to me, and for that reason I use the following:

I secure three wood pegs for each hive. They are about 5 inches in length, and are sharpened at one end. As we kill the queens, if we find one that we do not wish to kill, we stick one, two or three pegs on the left side of the hive; this means a laying queen. One peg means a fair queen, two pegs a good queen, and three pegs a choice one. The last are usually used for breeders if needed for that purpose. If the queen is killed, one, two or three are stuck behind the hive to designate the standing of the queen killed. Ten days later, at the time of cutting the cells, leaving a grafted cell or one of its own hive, one peg is stuck in the ground at the right of the hive, this means a cell. A week or ten days later they are examined for queen or eggs. If only a queen is found, two pegs are stuck at the right of the hive; if eggs are found, three pegs appear. These pegs remain in this position all summer, and the record is marked on the hive before they are removed to winter quarters. This record is made with pencil on side of the hives. By these records a glance at the hives in the yards enables me to tell the exact condition of each hive at any time.

A yard of 75 or 80 colonies can be gone over by two men and a boy in a day; that is, they will have ample time to either kill queens or cut cells.

I have been repeatedly asked how I find the queens so fast. This is acquired in almost the same manner as one learns to play the piano or to operate the typewriter. I can do neither of the latter, but I think I do know

how to find queens. It requires some natural ability, coupled with actual practice along that line of work. It would take too much time to go through all of the details of locating a queen under the various conditions in which they will be found.

The next thing is to go over the yards again in nine or ten days and cut all the cells but one in each colony; saving all of the choice cells from the best breeding queens and destroying all from the poorer stock. A number of nuclei are started from the surplus cells to supply any colony which may fail or have a poor grade queen.

Whenever a comb that carries a good cell can be exchanged we do so; otherwise a cut-off cell is slightly pinched between the combs just above some brood, or pinned on with a small stick or toothpick. Caution should be exercised at the time the queens are killed, to see that there are no cells left that might hatch before the cell-cutting time. In other words, cut all cells as well as kill the queens so that all of the queens will be of the same age. We also see that there is no unsealed brood in the hive at cell-cutting time, as cells might be started and the bees swarm when the grafted cell hatches.

After thoroughly going over a yard in this way a man could not earn his board keeping swarms. I have not handled swarms enough or late to keep in practice. I have been asked how it will work in the production of comb honey to kill the queens in this way. Why not? There are as many bees for the harvest as there would have been had the old queen remained in the hive, since it takes 21 days to rear a worker; besides the brood is not there to require feeding for a part of this time, and by the time the fall flow is on the queen has gotten acquainted with egg laying, and the colony goes into winter quarters with a hive full of young bees. Nothing else hindering, that means good wintering, and good wintering usually means a good crop.

After the super combs get a good start of honey in them, I try to go over my yards and change the empties to the middle, and those with honey in them to the outside of the supers; this makes uniform combs at extracting time. At this round all the brood-nests are examined for queens or eggs and marked accordingly.

A little about extracting and the extracting machinery and I am done. When the honey is ripe and ready to extract, I load my outfit of tanks and 4-frame automatic extractor (Koot's make), steam capping knife, and sufficient 5-gallon cans to hold the day's work, about one ton. As the yards are out 6 or 8 miles, it is well toward 10 o'clock before we get there. Team off and turned to pasture, the machinery is taken inside the building, and in less than 5 minutes all is set ready to run. The honey is rushed into the honey-house until nearly noon, when 50 to 60 supers of 9 to 10 frames are in the house. The fire is started under the capping-knife boiler, and while we eat our dinners the capping knife is getting hot. If it is too cold, and the honey is too thick to strain well, a two-wick oil-stove is set under the extractor.

At 5 o'clock we start for home, and while the man gets the team I rush the empty supers back on the hives. The 5-gallon cans have been carried out and loaded as fast as filled. The position of the machinery in all the houses is the same. First, to the right of the door, in the corner of the room, is the extractor mounted on a low bench. A two by four, about 12 feet long, is shoved under a block and nailed to the end wall of the house and sprung down over the back of the extractor and locked under a block and nailed to the side wall. This holds the extractor solid, and is all the fastening needed. Five seconds will have it ready for use.

Next, to the left, is the comb box, next the capping tub, the stove and steam boiler, and across the back end of the room are the honey and other tanks. An electric bell, which is worth its weight in gold, is used to tell us when the 5-gallon can is full of honey. This arrangement is simple, and is made ready for use in 10 seconds. It takes up scarcely any room in the house or in the wagon. The trip arrangement is a short board with a piece of No. 9 wire fastened across it, a short distance from one end; this is used to act as a fulcrum, and a brick is laid at the other end at a point that will balance a can of honey when it is almost full. When the can is almost full it tilts down and makes the electric connection, rings the bell for us to either change the cans or shut off the flow of honey.

When the capping tub is full of cappings, I beat them up and empty them into a strainer cloth that is spread over another coarsely woven burlap cloth tied over the top of a can, and allowed to bag down enough to hold the tub of broken cappings. When the capping tub is full again, the four corners of the strainer cloth are caught and the "wad" is dumped into another can with a screen bottom. At the end of each day's work this is hauled home, and the next morning, after drawing off the accumulated honey at the bottom, it is dumped into another tank in the storage house at home and allowed to drain until it is time to melt the wax. My home storage house is a building 24x68, two stories high, and in it I have a great many contrivances that I would like to show you, but time will not permit.

Colo, Iowa.

### Propolisine

BY A. F. BONNEY.

FOUND the attached article in a paper:

#### USE OF BEE-GLUE IN SURGERY.

"Propolis, or bee-glue, is a waxy or resinous substance collected by bees from the buds of certain trees, and applied by them to the stopping of holes and crevices in their hives, strengthening their cells, and to other purpose in bee architecture where it may be needed.

"On distillation this material yields an unctuous brownish liquid, to which the name of propolisine has been given.

"Propolisine has proven to be an admirable varnish for wounds, cover-



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ing the well-cleansed surface with an effective soothing and protective coating, and in France its great usefulness for general surgery and for battlefields has been shown by the experiments of Parvel and Mayer.

"Used either alone or with a little vaseline, propolisine has given perfect isolation from bacterial infection, with the best conditions for speedy and uninterrupted healing."

I cannot vouch for the truth of this statement, but can say that I have seen no mention of anything of the kind in medical magazines within a year. As a covering for wounds it might, as is claimed, give "isolation from bacterial infection," but unfortunately for the writer, American doctors do not "varnish" wounds, depending upon medicated gauze instead. To my mind this belongs to the same class of literature as do the tales of wonderful cures of rheumatism by bee-stings, and carrying a horse chestnut in the left pants pocket.

Buck Grove, Iowa.

[We don't believe the carrying of a horse chestnut in one's pocket should be mentioned in the same breath and on a parity with the cure of rheumatism by bee-stings. No remedy on earth can cure everybody, for there are different degrees in diseases. If a disease could *always* be cured by treatment, everybody should be enabled to die of old age. Yet very few people will condemn doctors and their prescriptions as does Elbert Hubbard. Propolis is given credit for quite a few new uses, and we propose to translate an article on the subject which has lately appeared in a European bee-journal. Meanwhile we are willing to have such good-natured critics as Dr. Bonney call our attention to new suggestions even if they do so only to oppose them.—EDITOR.]

## Honey and Its Falsifications

BY ALIN CAILLAS,  
Agricultural Engineer, Paris.

**T**HE bee's pure and naturally produced honey presents itself to us under different aspects. In normal conditions it granulates; that is to say, in a lapse of more or less time after its extraction, it hardens into a compact and crystalline mass. Instead of remaining liquid, it becomes more or less hard, according to its composition and the plants upon which it has been gathered.

The granulation of honey is a true crystallization. Honey is what we call in chemistry a "super-saturated solution," containing an excess of dissolved material, so that the liquid cannot remain indefinitely limpid at a stated temperature. However, the dissolved principles or constituents may remain in solution for a length of time more or less protracted, on account of atmospheric conditions or temperature, or the presence of substances which impede crystallization, such as dextrine. We then have to deal with liquid

honey. On the other hand, when the temperature sinks, when the atmosphere is dry, or when we add to the liquid honey a few crystals of granulated honey, the granulation is produced slowly, in certain parts first, and gradually invades the entire mass.

In natural condition, therefore, and without interference, honey may remain liquid or become solid.

But not all people have the same taste, and some prefer it in the one form, others in the other. We may, in a certain measure, liquefy honey or cause it to solidify.

Nothing is easier than the liquefying of granulated honey. It is only necessary to submit it to a gentle heat, to melt the crystals of glucose and levulose, without however removing the

he finds in the same jar a solid part and a liquid part, and he may suspect fraud. Some dealers remedy this possible accident by mixing with the honey one percent of glycerine, which delays and often prevents further granulation. Dextrine has exactly the same influence, and that is why some honey-dews or plant-louse excretions, harvested on pine trees, oaks, lindens, etc., rarely granulate, for they contain as much as 10 percent of dextrine.

It is more difficult to make the reverse operation, or induce liquid honey to granulate. We have no prompt method to do this. In no manner can we change liquid honey to granulated honey in a few hours. But a low temperature, a dry place, and a mixture of honey already granulated favor speedy granulation.

Granulated honey is usually sold in jars or in blocks cut into cubes and wrapped with paraffined paper. It keeps splendidly in this way. I will also cite a new package which consists in conical, paraffined tubes, made of paste-board and very light. They are used for preserves as well as for honey, and profitably replace the glass containers. [Similar tubes are described on page 10 of the January number.—EDITOR.]

When honey has been in the granulated condition for a long time, it often separates in two distinct layers, the lower solid, the upper liquid and transparent. The latter is composed almost entirely of levulose, which is very hygrometric and readily absorbs the moisture of the atmosphere.

Let us say, before studying summarily the adulteration of honey, that its condition cannot give us a positive indication as to fraud. Liquid or solid honey may be falsified. It is on more precise characteristics that we must rely in our researches.

In spite of stringent laws, there are, in all countries, manufactured products which compete seriously with pure bees' honey, mixtures of sweet com-



MR. ALIN CAILLAS, OF PARIS, FRANCE.

aroma and the "bouquet" of the honey treated. This operation should be called "pasteurisation," from the name of Pasteur, the great savant who pointed to it first as a means of destroying microbe germs and securing a perfect and unlimited preservation of the products thus treated.

This is constantly done for milk, beer, and all sorts of fermentable liquids. But for honey, the temperature cannot be raised beyond a certain point without danger. Not only this would give it a cooked flavor, but it would entirely evaporate and suppress the aroma which gives its sole value to the original product. As a rule, a "bain-marie" (water bath) over which the honey is placed, should not go beyond 70 to 80 degrees C. (155 to 175 degrees F.). Besides, the operation should not last longer than 20 to 30 minutes, and the bulk should be kept stirred.

We can thus obtain a product more or less transparent which should be at once placed in closed vessels to keep it from contact with the air.

Some honeys, however, granulate again quickly after having been properly pasteurized. That is an annoyance, for the purchaser wonders why



THE LABORATORY OF ALIN CAILLAS AT PARIS.  
Mr. Etienne Giraud at the right, Mr. Caillas in the center, the Editor on the left.

pounds with honey as well as manufactured articles which contain no honey at all.

There are in France, and especially in Germany, large factories which produce artificial honey through a well-known chemical reaction. When a solution of cane sugar or beet sugar ( $C_{12}H_{22}O_{11}$ ) is heated with diluted aci-

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(tartaric acid), a reduction is obtained called *inversion*, and the result is *inverted sugar*, composed of two sugars differing from cane sugar: *glucose* and *levulose* ( $C_6H_{12}O_6$ ).

This artificial honey is therefore made entirely of inverted sugar, and its manufacture has been so perfected that it is difficult, even for a well-informed chemist, to find the difference from pure honey, except through special chemical reactions.

Another preparation is made of a mixture of pure honey with sweet substances, such as the glucose syrup of commerce (crystal syrup, corn syrup) or inverted sugar above described. This may contain 10 to 50 percent of pure honey.

These products are currently sold in commerce, and the sales are authorized by law if the goods are properly labeled. Unfortunately, in the hope of a considerable profit, some makers do not hesitate to label those mixtures "pure honey," and it is easy to appreciate the great damage done to honest honey producers. I have often had the task of making chemical experiments, as official chemist of the "Société Centrale D'Apiculture," and of the "Syndicat de Défense de l'Apiculture Française." These tests are very delicate and require great attention, but with a little practice one succeeds in uncovering the fraud.

Another class of adulteration which is rarely found is produced either voluntarily or involuntarily by the apiarist by feeding sugar syrup to the bees. The analysis of this product is extremely difficult. Luckily this sort of adulteration is not sufficiently profitable to be much practiced.

When Mr. C. P. Dadant called at my laboratory for the second time on Oct. 8 last, I had the pleasure of making before him several reactions of honey, to establish the difference between this and adulterated goods. Although there is perhaps less fraud in the United States than in Europe, we have thought that it would be interesting for the readers of the American Bee Journal to make simple acquaintance with the chemistry of honey. We say in French: "*Un homme averti en vaut deux*"; or in English, in shorter words, "Forewarned, forearmed."

I will show, in my next contribution, the methods now in use to make the most simple trials of honey adulteration.

Meanwhile permit me to state that I should be very glad and thankful to receive, from American beekeepers, by parcel post, samples of honey of their crops. I would gladly send them in return copies of the tracts which I have published. My address is: 33, Rue Du Docteur Blanche, Paris, France.

## The Ontario Honey Crop and Prices

BY R. F. HOLTERMANN.

HAVE READ the timely remarks of J. L. Byer, under the heading of "Canadian Beedom," and an item under the New York State Beekeepers' convention report by F. Greiner, in which Mr. S. D. House is

reported as stating "that in Canada they had successfully settled the question as to" setting and maintaining the price of honey."

I am in entire accord with Mr. Byer's statement that "a curtailment of production should be the slogan rather than efforts to produce more honey." I have seen for quite a time what matters were heading up to—a crash. Beekeepers' associations have allowed themselves to be tools for the production of more beekeepers, individuals have allowed their best reports to be used to illustrate what profits could be made from beekeeping and—I speak advisedly—individuals have given out untrue reports of their profits from bees, the education and training a beekeeper needs have been minimized, and the gross returns and net profits were very closely related. I have undertaken in the Canadian press, to hoist danger signals, but they have gone unheeded. It is by no means the first time that I have pointed out mistakes in connection with the industry, and I have been ignored for a time, then the path I had pointed out had to be followed, and the same is true again. They laugh best who laugh last, is an axiom well worth remembering. I said that I could stand present developments just as long as the rest, and I did.

At present there is a large quantity of honey in Canada unsold. The West has carloads and carloads of honey which has been shipped to it, unsold. The Ontario Beekeepers' Association which undertook to sell beekeepers' honey, sold a few carloads. By what line of justice and equity some of the beekeepers' honey was disposed of, and others had theirs left on their hands I know not, but the great majority either have their honey still on their hands or had to dispose of it themselves as best they could.

A man called at my house recently who sold half of his honey, some 11,000 pounds, at a cent less per pound than the price set by the association, and was lectured for so doing, and told he had just thrown away a cent a pound on that portion of his crop. He could then not even sell it at the cent less which he had refused on the advice given him. I could give more such illustrations. The fact is that with a very light honey crop reported by the association for eastern Ontario and Quebec, there has been an over production. Hard times have reduced the purchasing power of the people, and honey sales have decreased.

The Ontario association seeing that it cannot handle the honey crop has dumped that responsibility on county associations; in other words, it has brought to birth a child (a large honey crop) and laid it at the door of another house to be taken care of and brought up, county associations selling it.

As to Mr. House's statement that in Canada we have solved the problem of setting and maintaining the price of honey, let me tell him *no*, we have not. The comb honey markets have gone all to pieces. Instead of getting \$3.00 a case for comb honey as recommended, it has gone down as low as \$1.75 per dozen for No. 1 comb honey, and is not bought at that price, and in the West I have some 1500 dozen fancy and No. 1 mixed comb honey which I

am trying to sell at \$2.40 a dozen to the retailer, and have been for 6 weeks, and that price is not making much impression on the dealer and consumer.

The Honey Committee has no doubt helped to make prices stable, but, after all, what made the prices has been the demand for the goods and the limited supply; in other words, what makes prices is "supply and demand." The demand has fallen off, and the price fixed by the committee has not been maintained.

Some may quote prices from various papers. Let me say such things do not fool me—I have been at the game too long to be blinded. The dealers are filled up with stock; they are not prepared to sacrifice, and they give these prices. But let the beekeeper try and sell at anything like such prices and he will soon find out the value of such quotations.

In fixing the price of honey much more has to be considered than the honey crop; perhaps some important items have not received the consideration they merit. There is one thing quite sure, and that is that with the way the honey market has gone of late; it leaves matters in a very bad shape for the opening of the market after the honey crop is harvested for 1914—if we get any crop.

Brantford, Ont.

## Encouraging Beginners

BY THE OPTIMIST.

SHALL WE ENCOURAGE beginners? Certainly, why not? Mr. Byer, in the American Bee Journal for January, says we should not, because in any line there is such a thing as overproduction, and in Ontario at least honey production has reached this point. I wonder if Mr. Byer is not just at present making plans to increase his number of colonies in 1914 so that he can himself increase the amount of honey produced?

To my mind there might be two or three reasons why we should not encourage beginners besides the one which Mr. Byer has advanced. First, if the country is already overstocked with bees, then of course it would be useless to encourage more beekeepers and simply increase the number of colonies and correspondingly decrease the production per colony.

Secondly, beginners should not be encouraged if the business of beekeeping does not pay. In other words if the beginner cannot have the assurance that his bees if properly managed will give returns which will justify time and money expended, then he should under no condition be encouraged to embark in the business.

A third reason which might be advanced would be that the danger from spread of bee diseases would be heightened by the addition of beginners to the beekeeping ranks.

The first of these three reasons I think we can dismiss at once, as I do not think that any one will claim



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that the country is overstocked except in some isolated spots.

I doubt very much if we can lay much stress on the unprofitableness of beekeeping when the industry is carried on with any degree of desire to succeed on the part of the beekeeper. At least it should pay a fair interest on investment besides paying for labor and other expenses.

I do not think that there is as much danger from the spread of diseases at the hands of the beginner as there is at the hands of the older, but shiftless, beekeeper: the one who never reads a bee book or bee paper but who "knows all about robbin' gums." The beginner is apt to read thoroughly all he can get on the industry and be ready for the emergency, should it present itself.

Let us now turn to the argument advanced by Mr. Byer that "there is an overproduction of honey." In the first place I do not think that the so-called production of honey is analogous with the production of other food stuffs from the fact that we do not actually produce honey. We simply keep bees that they may gather it. The nectar is produced by nature. It is there whether it is gathered or not. Why, then, not encourage the gathering of this article which otherwise goes to waste? Why not increase the amount of honey available even if such increase means a reduction in price? The reduction should be better for the people should it not? In the second place, I do not think that the prices of honey in Ontario warrant the statement that there is an overproduction. There is at present a stiff duty on honey importation into Canada. In fact the price difference, between the United States markets and those of Ontario, ranks well above two cents a pound on extracted honey. At least some beekeepers in the States are making headway at the lower price. The solution for Mr. Byer is to reduce the price at which he is holding his honey, or else increase the efficiency of the marketing end of beekeeping. To my mind this latter channel, proper marketing, will entirely relieve any tendencies of over supply.

I see no reason, therefore, for not encouraging beginners unless we look at the matter from a selfish standpoint. If we look at it in this way, then no one should be encouraged to go into any industry. It is possibly this reason which has led to the legislation in Imperial County, California, where tons of honey go to waste, yet there is a strict quarantine against bees coming in, be they healthy or diseased, as explained by Mr. J. E. Ross in his article in "Western Honey Bee" for December.

There are reasons why we should encourage beginners. There is the humanitarian reason. The more honey there is on the market, the cheaper it will be, and the better it will be for the bulk of the people. I think very few will gainsay that honey is better for the human family than sugar and

that it would be a blessing if it replaced the latter in a larger number of instances.

In numbers there is strength. The more people you have interested in beekeeping, the more apt they will be to secure desired legislation. I wonder if legislation is not apt to be a little easier obtainable since Mr. Pettit increased the ranks of Ontario members from a few hundred to considerably over a thousand?

We would not have the beginner take up territory used for vegetable growing or cotton raising. We would simply encourage him to make use of some of the sweets deposited by nature, to share with his family the treat of a honey spread instead of the commonly used Karo. He would in fact aid the vegetable growers instead of taking from their territory since the added number of bees would mean added chances for proper fertilization of blossoms.

To my mind there are only two strong reasons for not encouraging beginners in beekeeping: selfishness and overstocking. We can skip the first one. The latter I do not think we are in danger of, at least for a generation or two. Dr. Kramer of the German "Verein" has 9543 beekeepers as his followers in Switzerland, and they all seem to succeed too. In this proportion, how many beekeepers could Ontario have without becoming overstocked?

Then who wants to have the enjoyment incident to beekeeping all to himself? Just think on those warm spring days how nice it is to get out and "putter" with those bees, look for the queen, watch the first drones appear; and how fine are those big full combs of brood just before clover time! What anticipation there is in the coming harvest! Not encourage the beginner? If you look at it from the pleasure side, you ought to get a donkey-engine and pull him in.

## Doubling the Yield of Surplus Honey

BY G. C. GREINER.

FOR YEARS it has been my aim to emulate the average surplus honey yields of such men as Geo. B. Howe, G. M. Doolittle and other prominent beekeepers, but in exceptional cases only could I reach their figures. When Dr. Miller told of his crops sometime ago, counting up so many colonies with five supers, so many with four, so many with three, etc., when we lesser-light beekeepers of second and third magnitude had to be satisfied with one, two, occasionally three and once in a great while with four supers, I held locality responsible for this difference and to judge from appearances, my opinion in this respect is correctly formed.

The fact that the above named gentlemen laid great stress on breeding up a "superior strain" of bees as a means of increasing the yield of sur-

plus honey, I could never consider of as much consequence as they claim. Their efforts in this direction may have a tendency to produce vigorous healthy queens by using improved, up-to-date methods, but to breed a strain of uniform heavy honey-gatherers, is as impossible as to produce a race of Jenny Linds, of Mozarts or of Schillers and Goethes. These are freaks of nature, beyond the reach of human skill and ingenuity to produce. It is the same with these extra heavy yielders in the bee-line. What has become of the progeny of those heavy-yielding, high-priced breeders, of the long-tongued clover queens, etc., of which we have read occasionally? They loom up on the horizon now and then, illuminate the sky for a short period and then like Halley's comet, sink into oblivion.

In my opinion, formed years ago, the value of a queen in regard to honey gathering proclivities is governed more by management and surrounding conditions, than by breeding up a so-called "superior strain." My experience of recent years strengthens my position on this point. For instance: On May 4th, when all the winter packing had been removed and the hives arranged for summer handling, I gave my bees their first thorough spring examination. Among the weaker ones I found one so reduced in bees, that I considered them "beyond help." In two comb spaces they covered a little patch about the size of a person's hand, but the queen seemed to be in fine condition; large, well developed, fine color, only one year old, and, all in all, a desirable addition to any apiary. I felt anxious to save her, and as an experiment, I decided to once more revive an old method by exchanging this weak colony with a strong one; a manipulation I practiced more or less in former years, but not always with satisfactory results.

For this trial I selected a fairly populous colony, but by no means an extra good one, for I would not risk one of my best swarms from which I expected heavy yields, on uncertainties. After the queen had been caged 48 hours she was readily accepted when liberated and the way queen and bees took the situation was remarkable. Brood was started at once; from day to day a decided progress could be noticed and about six weeks later, when the white clover flow began, it was one of my best colonies. It produced during the season 151 pounds of white and 63 pounds of dark, extracted honey, besides 10 or 15 pounds in the combs, when the super was taken off at the end of the season.

If this queen had been left to depend on her own resources it would have taken her all summer, even under the most favorable conditions, to build up her little colony to wintering condition, providing she had survived, which was extremely doubtful. But with the reinforcement of the flying bees from the stronger colony and a



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fairly good honey season she proved the position I have taken above.

One more point on this subject. My heavy yields of the last two seasons were taken partly from the customary stock of "untested queens," sent out by the American Bee Journal, and partly from the same grade, purchased of J. M. Davis, Springhill, Tenn. To judge from their satisfactory service they were properly reared queens, but as far as I know, nothing was said of "superior strain." At least, no exorbitant prices were charged for them; they can be purchased at fair, living rates.

The use of full sheets of foundation and bottom starters in our sections, as advised by Dr. Miller in some of his former writings, is a long step towards increasing the yield. Years ago, before I owned an extractor and produced comb honey exclusively, I used foundation very sparingly. I considered full sheets a great detriment to the honey industry on account of the objectionable "backbone" feature. My impression was: the more foundation used, the poorer the grade of honey. This was undoubtedly true at that time. But since foundation has reached the high state of perfection of the present day, the objection of years ago has vanished. In fact, by the use of full sheets of "extra thin" in my sections, I have produced the past season as fine a quality of comb honey as ever was made on naturally built comb. It would have baffled the skill of an expert to detect the difference.

As I indicated at the outset of this article, I have never been wholly satisfied with the average yield of my bees. To accomplish what the above heading implies has been a vain attempt on my part, until within the last two years I have perfected a method, that not only doubles the yield but in many instances more than trebles it. Although I am not through experimenting along this line—there are still a number of points to settle the coming season—the results I obtained are so unprecedented that I feel justified in considering this new method a great advance on the honey production as commonly practiced. There is nothing, complicated or mysterious about the whole system, it is simple, common sense management, that any person with very little experience can follow up and succeed. Outside of the increased yield, many advantages are brought about by this method of which I will speak later on.

The starting point of my discovery, if I am entitled to call it such, dates back to five years ago. It was an incident of an accidental nature, that aroused my desire for further investigation.

When the white clover flow of that season was nicely under way, some of my very strongest colonies had filled their combs and were beginning to cap in different places. It is my rule to give more storage room at

this stage, by way of equalizing. I take from the center of each super two of the heaviest combs and exchange them with two empty ones from some of the weaker ones that have not yet started storing. To make this operation effective in two ways, hitting two birds with one stone, I take all the adhering bees with the combs. This reduces these over-populous colonies and helps to prevent the swarming fever, while at the same time it assists in building up the others, and in many instances induces them to start work in their supers.

The next day a neighboring beekeeper called on me for a bee talk, and when the conversation turned to extracted honey I invited him out among the bees to explain to him my recent manipulations by actual observation. When I took out one of the combs I had exchanged for a full one the day before. I found it seemingly as heavy as the one I had taken out, and for my own satisfac-

tion I took out the other and found it in practically the same condition. That bees fill a set of empty combs in a remarkably short time during a good honey flow can be noticed almost any day when producing extracted honey, but this fact was never brought to my notice in such a striking way as at this time.

When this friend had taken his departure I examined all the hives I had treated, as explained above, the day before, and as far as I could ascertain, all were in the same condition. To investigate a little farther I changed these same combs a second time with exactly the same results on the third day. I changed them again the third day and the fourth day and still these combs were being filled without perceptible let up. By this time I had no more empty combs to exchange. All the weaker colonies were beginning to work in their supers and needed what empty combs they had for their own use. To supply those needy colonies with more



APIARY OF E. H. UPSON, AT UBEE, IND.



ANOTHER VIEW OF MR. UPSON'S APIARY.

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storage room I had to resort to second supers. I did not place them under nor above the first one, but exchanged one-half of the full combs of the first with one-half of the empty combs of the second and then placed the latter on top. All the empty combs, below and above, were quite heavy again long before the combs on which bees were capping were ready for the extractor.

Taking a review of the little experience just related, the following facts revealed themselves: During the four days of experimenting each colony stored in the two, four times renewed combs, between 30 and 40 lbs. of honey, while during the same time the gain of the remaining combs that were being capped, about three-quarters of the super's storing surface, was only a few pounds. This demonstrated that the gain in supers when bees are storing is greatly in excess of the gain when ripening and capping and it seemed very evident that by the application of this principle in a general way great advantage could be obtained. If, for instance, all the combs in each super had been changed, the same as the two in the center, and bees had stored in all at the same rate, the amount gathered in those four days would have been nearly four times as much or approximately 150 pounds. Assuming that the honey flow had lasted three weeks the honey gathered during this time would have reached the moderate little amount of 750 pounds. Quite an item for one colony.

Bright as this prospect seemed at first, a little doubt crept in through the question: What shall we do with all that green, unripe honey? This question will be answered by the success of my method, which I will give as a continuation of this article.

Le Salle, N. Y.

## Notes from Northern Indiana

BY E. H. UPSON.

**T**HE PROBLEM of wintering is one which taxes the ingenuity of the beekeeper in this latitude (between 40 and 41 degrees). Hardly cold enough to require cellaring and hardly warm enough for outdoor wintering without some sort of protection. For a number of years I have practiced placing a super full of dry chaff over the brood-nest, and in ordinary winters this is sufficient; but when we have a winter such as 1911-1912, we need more protection. This winter I am trying jackets of prepared roofing over most of my hives, and have them so constructed that each hive has a dead-air space around it. I have figured that this will be an ideal protection, but will await results and report in the spring.

I am wintering my bees this winter in double-story 8-frame hives, and these jackets extend from the bottom-board up over both hive-bodies and nearly or quite to the top of the chaff super, the whole being covered with a sheet of

galvanized metal to keep everything dry.

Our agricultural journals should maintain a bee-department under the management of a practical beekeeper. About a year ago I called the attention of the editor of one of our leading farm papers to this subject, and he claimed he could not afford to pay the prices for contributions equal to the prices paid by the regular bee-journals. This same editor publishes articles by beekeepers, but some of them are so misleading as to be an injury rather than a benefit to his readers.

The season of 1913 proved to be a good one for beekeepers in northern Indiana, and bees are in splendid shape for winter, while clover is plentiful and there is a prospect of another good season in 1914.

Ubee, Ind.

## Odor and Scent in Bees

BY DR. BRUNNICH.

**O**N THIS EAGERLY discussed theme I will write once more, and for the last time. The absolutely safe introduction of queens was for me always, and is until now an unsolved problem, although I have made a great many experiments. I confess freely that years ago I lost numerous queens with the direct method, so that I returned to a modified cage method: The queen is caged two or three days or longer in the hive, then all frames with bees are powdered with meal, a great many of the bees are shaken, and in the midst of them the powdered queen is allowed to enter the hive. This method is based not only on the smell theory, but also on the intimidation of the bees. A perplexed bee will not use its sting. But also with the new method of Arthur C. Miller I had losses.

Besides a great number of experiments in this direction I employed, generally with success, is the following based on the scent theory: I crushed the heads and breasts of two bees with a little water. With this liquid I daubed the new queen and let her enter or put her on a frame. It is not to be forgotten that not in a single circumstance does the scent decide the good or bad result, but that there are always a number of facts which influence it.

I, for my part, uphold the theory that it is the scent which enables the bees to distinguish each other, for the following reasons: Almost all of the insects have an exceedingly sharp sense of smell. We know that the males of butterflies will scent a female which is confined in a room with closed windows, and it is of course not only the sexual odor which guides the male, but also the odor of the species. Like the Editor, I think that each colony has its individual scent; certainly the bee has a very acute sense of smell. We must admit that it is this very scent which makes the bees recognize each other or foreign ones.

With the scent theory we can explain all the respective phenomena, if we do not forget that there are still a number of other influencing facts: season, time of the day, honey-flow, robbing, etc. Why then not accept a hypothesis,

which is most probable, and accords well with the facts? We will never be able, of course, to prove mathematically this hypothesis; but Mr. Arthur C. Miller gives no explanation at all, therefore I see no reason to drop the hypothesis until a better one is given. I can but support all that the Editor and Dr. Miller say in the February number.

An experiment which I have made often, and which each beekeeper can



FEEDING BEES RYE CHOP AS A GOOD SUBSTITUTE FOR POLLEN IN THE SPRING.

—Photographed by D. M. Bryant.

control is the following: To a little colony I united the bees of a queenless nucleus, which goes very well if we spray both with water with about one-half percent of thymal, to cover the scent. The following day I put some bees, which had still remained on the last place, on the alighting-board of the colony, and it was interesting to observe the behavior of the guards. In the first moment the guards rushed quite hostilely against the intruder, but after smelling it, retired and let it enter. I cannot but assume that in the first moment the guard considered the bee as a stranger, but found that it was one of the same bees with which the colony had made friends.

As to the last point, "requeening without dequeening," I can but say that my bees, as a rule, ball and kill the foreign queen, and the case of their own queen being killed is certainly an exceptional one. But with the bees all things are possible.

A great many of the reported good results of queen introduction are doubtful, because the queens are often not marked in an infallible manner. After the experiences with the new direct method, which does not differ essentially from the old one, with my bees, which are of the black race (which I thought rather to be less diffident than the Italians), I can say: A laying queen is accepted by a regular queenless colony under difficult circumstances (i. e., dearth) in about 80 percent of cases; a queen which has not produced eggs



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the last three to five days or more under the same conditions in about 40 to 60 percent of cases. In demoralized colonies percent is considerably less. It is true that our conditions here are

certainly, as a rule, by far less favorable than in the United States; therefore, your results are considerably better than ours.

Zug, Switzerland.

5. If you should succeed in getting foundation with wire cloth in it, or indeed any similar base, neither wires nor splints would be needed. But from what I know about the matter, I think you will only waste time in any such experiments.

## DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to  
DR. C. C. MILLER, MARENGO, ILL.  
He does NOT answer bee-keeping questions by mail.

### What Section to Use

1. Which section is best for the 8 frame super, the  $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$  or the  $4 \times 5 \times 1\frac{1}{8}$  section?
2. Which width of these sections mentioned, if well filled, will hold just one pound of honey, the  $1\frac{1}{4}$ -inch width or the  $1\frac{1}{2}$ -inch width?

OREGON.

ANSWERS.—1. There is little to choose, but most beekeepers would prefer  $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$  to either.

2. There is no size that will uniformly give just one pound of honey. The amount stored in a section varies with the season, bees, etc.

### Goldens or 3-Band Italians—Painting Hives

1. Is it a fact that the 3-banded (the bee from northern Italy) is the best Italian bee for the extracted honey producer, because it utilizes less wax in capping its comb than the lighter (the bee from southern Italy) or golden Italians?
2. If the queen-breeders of Italy have not used the careful methods in selecting their stock that the American breeders have, why are the daughters from imported Italian queens, those one generation from imported stock, the best bees for the extracted-honey producer, as Doolittle claims on page 9, in Jan. 1 issue of *Gleanings in Bee Culture*?
3. If a 3-banded Italian queen mates with a golden drone, what will be the color, uniformity and temperament of the progeny?
4. If a golden Italian queen mates with a 3-banded drone, what will be the color, uniformity and temperament of the progeny?
5. Same as question No. 3, but substitute German (black) drone in place of golden drone.
6. Same as question No. 4, but substitute German (black) drone in place of 3-banded drone.
7. Does a cross between a 3-banded Italian and a pure golden, or between a pure golden Italian and a 3-banded make as energetic honey-gathering hybrid progeny as a cross between a pure 3-banded Italian as a pure golden Italian and a pure German?
8. Is it a fact that a strong colony of bees soon varnish and make impervious to moisture the entire inside of a new wooden hive, and if so upon what grounds do you object to the exterior of the hive being painted?

CALIFORNIA.

ANSWERS.—1. I don't know; I didn't know a difference in amount of wax in cappings was claimed.

2. Taking this question, and looking ahead at the next five questions, it seems pretty evident that you're trying to exhaust my stock of "I don't know" answers. In the present question I might make the guess that if Italian breeders, as you say, have not carefully selected, then careful selecting on this side would improve the next generation. Perhaps a better guess is that irrespective of previous care in selecting, when the daughters of an imported queen meet drones of stock kept here, there is more or less in the way of crossing, and a first cross is likely to have unusual vigor. But I don't hold Mr. Doolittle responsible for my guesses.

3, 4, 5, 6, and 7. One reason for saying I don't know to all these questions is that one of the factors in each of the problems is so

variable as to prevent a definite answer. There are good goldens and poor goldens, and different grades from good to poor. Neither is it certain that I could answer satisfactorily if the varying factor were eliminated. In the matter of color, however, I should not expect uniformity, but part of the progeny following one parent, part following the other parent, with perhaps intermediate shades.

8. No, I have no good authority as Doolittle and Dr. Phillips for saying it is not a fact, the latter saying that blisters are raised on the outer paint through moisture that has passed through the inner propolized surface.

### Transferring from Box-Hives to Modern Hives

When is the right time to transfer bees from box-hives to modern hives, and how?

KENTUCKY.

ANSWERS.—Wait until the bees swarm (in your locality they are likely to swarm in May), then hive the swarm in an up-to-date hive and set it on the old stand, setting the old hive close beside it. A week later move the old hive to the opposite side of the swarm, and then two weeks later still, or three weeks from the time of swarming, when all the worker-brood will be hatched out, break up the old hive and add its bees to the swarm. Then you can melt up the old combs.

### Reinforced Foundation

1. Have you tried dipping cloth into wax and passing it through a foundation mill? If so, what kind of cloth, color, and preparation?
2. Will bees accept that kind of foundation?
3. Do you think the color of the cloth will make any difference?
4. Will tin cloth injure the rollers of the mill?
5. If the cloth will work, would it not do without wire or splints?

WASHINGTON.

ANSWERS.—1. The nearest I ever came to anything of the kind was before comb foundation was to be had, when I coated paper with wax and gave it to the bees. Of course it was not put through a foundation mill, which, at that time, I had never heard of.

2. Yes, the bees built comb on my waxed paper, but it could be drone-comb as easily as worker, and if it had been put through a mill I suspect the bees would have torn it down. At any rate J. Y. Detwiler afterward sent out samples of the same thing with tin-foil in the center and then run through a mill, and my bees tore it down.

3. I don't think color would make any difference, but material might.

4. Yes, I would expect tin cloth, or wire cloth to injure a foundation-mill. To be sure, foundation has been made with wires running through it at intervals, but that is made on a special mill which makes the septum of the foundation entirely flat.

### Preventing Swarming—Sour Honey—Honey-Dew

1. Can I prevent swarming if I remove the queen after the colony has built up strong and let it rear another queen?
2. What color is the Caucasian bee if the stock is pure?
3. If a queen is introduced in the spring, will the colony swarm the same season?
4. How does it work to set an empty hive on the old stand, say with five frames with empty combs, the queen to be introduced so the bees can get at her to let her out, and let the old bees go into the new hive; then after the bees accept her remove the queen in the old hive, and about eight days later return the bees to the new hive on the old stand?
5. How do Cyprian bees stand our winters?
6. What makes honey sour in the hive when the flow is at its best and no honey-dew? This season I ran my bees for comb honey; in some of the hives honey soured before it was capped.
7. Why is it that in honey-dew seasons some colonies gather more honey-dew than others? Such has been my experience.
8. Do certain races gather less honey-dew than others? I have been told so?

ILLINOIS.

ANSWERS.—1. You can hardly find a surer way to make them swarm, for when the first young queen emerges a swarm will issue with her. You can prevent this, however, if you kill all cells but one, about a week after removing the queen. There is a little danger, however, that you may not leave one of the best cells—you may even leave a cell containing a dead larva. A safer way is to leave all the cells; then a week after removing the queen put your ear to the hive each evening until you hear the young queens piping. When you hear this go to the hive the next morning and kill all queen-cells, leaving the young queen that is already at large.

2. About the same color as the common black bee.

3. Generally yes. But if three requirements are fulfilled, you may feel pretty safe against swarming; the queen must be a young queen of the same season; she must not be introduced until swarming time; and there must be about 10 days between the time the old queen stops laying and the new one begins.

4. I don't believe there would be any gain over introducing the queen direct without so much trouble.

5. I think about the same as Italians.

6. I don't know. I know it sometimes occurs, and I suppose it is something in the character of the honey itself.

7. I don't know. Possibly there is a difference in colonies as to their preference for different sources. One year I had one or more colonies that gathered honey of light color while the rest gathered buckwheat. It might be that they strongly preferred the lighter honey, or it might be that they just happened on the lighter honey in some particular place.

8. I don't know. It is possible.

### Preventing Swarming

When one of your strong colonies having two supers almost full, decides to build cells, how do you proceed to bring about contentment in the hive and restore the storing impulse?

MINNESOTA.

ANSWER.—You are supposing things that hardly occur. I wouldn't expect to find on a strong colony in a good flow a couple of supers almost full and nothing else.

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There would surely be an empty super under, and very likely another on top. Neither would I expect to restore the storing impulse, for I would expect it to go right along while cells were being built. However, in general, when cells are first found they are destroyed, and this may occur about once in 10 days so long as no cells are found well advanced; but when found well advanced steps are taken to stop the laying of the queen for about 10 days, at the end of which time either a new queen or the old one is allowed to begin laying. A full discussion of the matter in "Fifty Years Among the Bees" would no doubt interest you.

## Swarming Caused by Crowding

I have noticed that the colony that keeps its brood-nest free from honey is not apt to swarm. Is this in line with your observations?

MISSOURI

ANSWER.—I don't know; but you may be right. Certainly we know that when the queen is crowded for room it tends toward swarming. The more honey crowds into, or encroaches upon, the brood-nest, the less room the queen has for laying, and, it would seem not unreasonable to argue, the greater inclination to swarming.

## Brood Above Excluder

1. Is there any danger of swarming when the brood from a shaken swarm, with plenty of bees to take care of it, is put in a new location and allowed to rear a queen of its own?

2. A shaken swarm is made by shaking the bees on ten full sheets of foundation, and the brood set on top with a queen-excluder between the two hive-bodies. If the brood is left two or three days, will it hold the bees as well as when one frame of brood is left with the bees below?

3. When one frame of brood is put in with a shaken swarm should it be left, or would it be better to take it out in about three days to lessen the danger of swarming?

I would make the manipulations as described above, about the first of June or swarming time.

ILLINOIS

ANSWERS.—1. There would be considerable danger with a large body of brood if no queen-cells were present at the time of operating, for by the time the young queen—or rather young queens—would mature, the colony might easily be strong enough to send out a swarm with the queen first emerging. But if queen-cells were well advanced at the time of operating, the danger would be very remote, for at the time of the emergence of the first queen there would be few or no field-bees, and the young queen would be allowed to destroy her rivals.

2. I think it would hold them just as well.

3. The general experience seems to be that it is better to take it out.

## Using Splints

I would like to ask your opinion, after reading your book, entitled "Fifty Years Among the Bees." On page 83 you give the dimensions of your frames, and further on you mention splints, which I think I would like. How would it do to make the bottom-bar the same thickness as the top-bar, and instead of having two grooves, one for foundation and one for wedge, have only one groove in each bar; then by having a board nearly the same size as inside of frame, and thick enough to come to bottom of grooves, the foundation by buckling a trifle could be made to enter grooves. After boiling the splints in wax, buckle them into place the same as foundation. Then use hot wax along the top and bottom bar to fasten it in. This would reduce the size of frame, but with the Hoffman frames I find it hard to get the bees to build down to the bottom-bar as they should, so lose some space there anyway.

WASHINGTON

ANSWER.—Your plan will work all right. But you don't need to have any kerf in the

bottom-bar, and then you won't need to have it as thick as the top-bar. Indeed, if you wax in the foundation, top and bottom, you will not need kerfs either place. I have some frames without the split bottom-bar, and it works all right. You may say you want the kerf to hold the splint, I never yet put a splint in a kerf, and see no need of it. Of course the top-bar must be thick, kerf or no kerf.

## Too Early to Predict for 1914?

Is it too early to predict what the white clover crop will amount to next season? It seems to me that it looks thicker now than I ever saw it at this season of the year.

We have a 50-acre field near our house that was sown to blue grass two years ago. There is now a good sprinkling of young blue grass, but as a whole the field is almost a perfect sod of white clover. I also notice it is pretty thick in old blue-grass pastures. Do you think this looks good for a harvest next season or is it too early to count?

KENTUCKY

ANSWER.—You never can tell in advance just what clover will do. Sometimes it blooms abundantly and yet yields no honey. But when you see the ground well covered with the plants this time of year you may count the chances at least 3 to 1 that it will live through and give you a crop unless a bad drouth occurs.

## Good or Bad Location?

1. In order to combine the heat can I make and build into two strong colonies a twin nucleus with laying queens by placing one brood-chamber on top of another with wire screen between?

2. Where shall I look for royal jelly? How shall I know it when I see it? Is it ever stored in brood-combs?

3. I live in a timbered region where the country is about one-fourth cleared; the cleared land is covered with blackberries, asters, goldenrod, and a little white clover; nearly every farm has a small orchard. The forests are composed of a small growth of linden, sourwood, poplar, chestnut, black gum, hard and soft maple, alder, a little willow, and some wild flowers. What kind of a location do you think I have?

4. How many colonies can I handle in one apiary?

5. Should I run for comb or extracted honey?

6. If I run for chunk comb honey what variety or cross of bees should I use?

VIRGINIA

ANSWERS.—1. Yes, but you may like it better to have the two nuclei side by side in the same hive, with a thin division-board in the center.

2. You will never find royal jelly in the hive until the bees start queen-cells; then you can't miss finding it in these cells; a milky looking paste.

3. I should think bees might do well there.

4. Perhaps 75 to 100 colonies.

5. I can't tell you; depends upon your market; like enough extracted.

6. You will be pretty safe to choose Italians for any kind of honey.

## Sweet Clover—Artificial Pollen

1. How would it work to give the mother colony a laying queen as soon as it has cast a prime swarm; remove all queen-cells and move them to a new location in the same yard.

2. Recently it was stated in one of the journals that a crop of hay and a crop of honey could be secured from a field of sweet clover in one year. Now that is wrong, a crop of honey and a crop of seed can be gotten in one year. But in order to make good hay it must be cut sooner than if it was allowed to grow to secure a crop of honey out of it.

3. Why is it that in your telling the use of rye flour and pea meal for artificial pollen, you never mention wheat flour. Why is wheat flour never mentioned or recommended?

4. Did you use artificial pollen for your

bees in the spring of 1913? NEBRASKA.

ANSWERS.—1. I suppose you mean to set the swarm on the old stand; it would work all right.

2. Yes; but why not cut for hay before blooming? That would make the honey crop later; and this would be of greater value in a white-clover region where sweet clover is likely to bloom during white-clover bloom. Cutting the sweet clover early would allow it to bloom after white clover was done, thus prolonging the season.

3. It is probably a case of blindly following tradition. My guess would be that wheat is as good as rye; but I never tried either. I know that ground corn and oats does well.

4. No.

## Swarm on Stand of Parent Colony

1. Will it prevent the mother colony from swarming again if the prime swarm is put on the stand of the old colony removed to another stand without taking the super off?

2. How long must a colony be left queenless before introducing a queen?

3. How is the queen put in with the new colony?

4. Will bees go up into the supers for honey if they ran out of honey below when in the cellar for winter?

5. When returning an after-swarm to an old colony is it necessary to kill the queen?

MINNESOTA

ANSWERS.—1. Sometimes, and sometimes not. But the following plan may be counted on in nearly all cases: Set the prime swarm on the old stand with the old hive close beside it, facing the same way; a week later move the old hive to a new stand 10 feet or more away. The super or supers should be taken from the old hive and given to the swarm as soon as the queen has made a good start at laying, say within about three days.

2. Practice differs; some give the new queen at the same time the old one is removed and some wait three or four days. I have had success by giving the queen at time of removing the old one, but not allowing the bees to liberate her until three or four days later.

3. Generally in an introducing-cage.

4. Maybe, and maybe not. Unless pretty warm and the colony strong, likely not.

5. Not absolutely necessary; but if you pay no attention to the queens you may have to return the swarm several times. But if you destroy all the queen-cells left in the hive, once returning will answer.

## Increasing Where the Honey-Flow Comes in August

On April 26, I received three ½-pound packages of Italian bees with queens from Alabama. I put them in new hives with full sheets of foundation. When I packed them for winter one hive had the ten frames full of bees, honey and brood; the other two had nine frames each of brood, bees and honey. I am sure they will winter. They were bringing in pollen today (Dec. 13). By Aug. 1, 1914, I want ten full colonies. Tell me just how to proceed and when to start. One honey-flow starts here in August. We have abundant white clover in the spring, but bees do not seem to store until August. Then the honey is from goldenrod and a yellow daisy growing in the swamps of our county.

I was thinking of getting three more bodies and placing them over each colony about April 25 or May 1 with full sheets of foundation; that should prevent swarming in May. When the two bodies are full of bees then I could divide for increase by taking five frames of bees and brood from the upper body and placing them in a hive with five full sheets of foundation, and buying a queen for them; place the new hive where the old one stood, and remove the old one to a new stand and replace the five frames of brood and bees taken from it with five frames of foundation; and when they fill up do the same thing again.

I put a super on one of my hives Sept. 1,



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and the bees would not go up through the queen-excluder I had under it. Of course, the season was late, but I don't believe they would carry honey up through that unless it was a very heavy flow. The next time I am going to try the super without the excluder. Do you think the queen would go into the sections?

PENNSYLVANIA.

ANSWER.—Don't you think you're asking a good deal? You want not only to increase from 3 to 10 colonies, but to have them full colonies by Aug. 1 in a place where there is no flow until August. Of course you can make up somewhat for the lack of a flow by feeding, but feeding never seems to be quite as good as the natural flow. There is a possibility, however, that there is more of a flow than you think earlier in the season. Even if not enough for a surplus, if there is just enough for the daily needs of the bees they may build up just as well as with a heavy flow. Your idea of buying queens will make quite a difference. Your plan will be all right if the bees do as you plan; that is, if they fill two stories full of bees, and then do it a second time. If you get 10 full colonies by Aug. 1, you ought to get a good deal more than one super from each colony, seeing that your harvest comes after that time. But if the colonies do not build up until later, leaving you without surplus, you ought not to complain bitterly.

Instead of putting a second story over each colony, it may be better to put it under, for so early as May 1 an upper story might cool off the bees too much. Besides, bees naturally extend their brood downward rather than upward. If I understand aright, the new queen will be on the old stand, where all the older bees will be. She will be received more kindly if you put her in the other hive.

I think it was the lack of the flow and the lateness of the season rather than the excluder that kept the bees from going up into the super. But I never use an excluder under sections, and have very little trouble about the queen going up.

## Double-Walled Hives

What do you think of double-walled hives for this locality? Bees cannot be wintered here in cellars as the climate is too changeable. None of the old beekeepers here use double-walled hives. They say there is no need of extra expense, and bees do as well in 10-frame single-walled hives. Neither do they use any sort of winter cases, as they say that if anything of the kind is used it should be left on all the time, as in such a changeable climate no one could tell when to put it on or take it off.

Is the double-wall hive any advantage in hot weather if the hives are properly shaded? Of course the cost of double-walled hives is much more than the single-walled, and also much more trouble to handle, but if the advantage of double-walled hives is greater, I would be willing to pay the extra cost and take the extra trouble.

SOUTHERN ILLINOIS.

ANSWER.—As a rule, it is wise to attach weight to the experience of others in a given region, although something depends upon their intelligence. At any rate, no farther north than 38 degrees it is not at all likely that double-walled hives are advisable either for summer or winter.

## Transferring, Increase, Etc.

1. I bought 8 colonies this last summer; 6 of them I will transfer in the spring into new hives. I will put a new hive with wired frames on top of the old stand, drive the bees into it and put an excluder between them, and leave them for 21 days, and drive the balance of the bees into the new hive, then I want to divide them. Then I figure that in three weeks from the time I make the change I can divide them. I will put

them into new hives about fruit-blossom time. Am I right?

2. I bought 50 colonies for an out-yard, and will want several queens. Will you tell me the best or good way to manage an out-yard to prevent swarming as much as possible, and what is the most professional way to make divisions so as not to hurt the honey crop too much and yet have some increase?

3. How many sections  $4\frac{1}{4} \times 4\frac{1}{4}$  will one pound of thin super foundation fill; full sheets?

4. Do you advise full sheets to get better filled sections? Does it pay?

5. Do you advise spring feeding early to induce brood-rearing?

6. Would you advise one-pound packages of bees rather than 1, 2, 3 frame nucleus?

SOUTH DAKOTA.

ANSWERS.—1. As I understand it, you will drum the bees up into the new hive, and leave it three weeks over the old hive, an excluder between, then three weeks later still you will divide. That would make the division six weeks after the drumming, or, to put it the other way, you would drum six weeks before dividing, or six weeks before fruit bloom, since your plan to divide in fruit bloom. Six weeks before fruit bloom the weather will be unfavorable, there will be little or nothing for the bees to gather; they will probably not be very strong yet, and if you drive them from their combs and ask them to draw out foundation you will probably knock things endways for the season. Better wait until the bees have built up strong, even if you have to wait until after fruit is in bloom. Indeed, even if they are strong, it will be well to wait until after a very few days before fruit bloom, say four or five. Then drum your bees up into the new hive, and set the new hive under the old one, with excluder between. (Bees extend their brood-nest downward rather than upward.) Ten days after the drumming, take away the old hive, bees, brood, and all, and set it on a new stand. Then 11 days later, or 21 days after the drumming, drive the bees from the old hive into a new one furnished with full sheets of foundation. It may be the bees have reared a queen; if not you must give them one.

2. Perhaps the most popular way is to shake a swarm as soon as colonies first begin to swarm, which may be called anticipatory swarming. If you do not care for much increase, you can double up the brood-combs from two or more colonies.

3. About 100.

4. Yes, indeed; I could hardly be hired to

use less.

5. I do not practice it; so could hardly advise it. Harm may be done by feeding when too cold. If the bees have abundance of food—not merely enough but abundance—and have all the comb they can cover, what more can you ask? There are places, however, where early in the season, but after it is warm enough for bees to fly freely every day, there is so long a dearth of forage that the queen soon stops laying. In such a case it is important to feed every day, or every other day, enough to keep up laying.

6. The same number of bees will of course be worth more with frames of brood than without; but considering the expense of expressage on combs, it is likely that a given amount of money put in bees without combs will be better than the same money put in nuclei.

## Wants Best Advice on Getting a Crop

I put into winter quarters 21 colonies of bees; all in good shape as far as I could see. Those that I had any doubt about having plenty of stores to winter and carry them late in the spring, I fed.

Almost all of them are in double-walled hives, to frames. Nearly all have young queens. I have an additional protection around them; they are boxed with lumber, and covered so that no snow or rain gets on the hives; a space of 6 or 8 inches between the hives and protection boards; but it is not packed with anything. I have boards in front. I let them down when it is warm enough for them to fly. They had a flight three days last week. I saw some of my bees  $\frac{1}{2}$  mile from home. They flew very strong from each hive, like in summer time, and I carried out lots of dead bees; they "appeared" to be in good condition.

I can have \$40 or \$50 to put on them next summer, and I want to make them do the very best possible in the way of honey production. My pasture is principally white clover, a good amount of alsike and red clover. Sugar maples are abundant, as are apple and peach trees, etc. There are not many bees here, and no disease.

I would like some advice as to management in order to make the most out of them. I have two supers or more per hive. I use generous sized starters of foundation in the sections. I will want 10 or 15 new hives, but not enough swarms to interfere with the honey crop.

OHIO.

ANSWER.—I have written out in full detail the very best advice I know how to give to one who desires, as you do, to get the bees to do their level best, and you will find it all in the book that you have, "Fifty Years Among the Bees." By following the plans there laid down, last season I secured an



APIARY OF D. M. BRYANT AT ETHELFELTS, VA., PREPARED FOR WINTER. The hives are wrapped in newspapers and building paper.

# American Bee Journal

average of 266 sections per colony. Then be sure to keep tab of what each colony yields, so as to breed from the best afterward. There may be some question whether you are warranted in departing from the usual plan of having packing in winter; but if you have had previous success in that way, it may be all right to keep on. Anyhow, a good flight in the last of January promises well for good wintering.

You want your bees to do the *very best* in the way of honey production, and say you will want new hives for about 50 percent increase. You can't increase as much as that without interfering with the honey crop, unless you are sure of a heavy late flow. You have two supers or more per hive with generous starters in sections. Oh, you stingy fellow! Asking the bees to store a big lot, and then giving them so little room to store it in. I wouldn't want less than 6 or 7 supers for each colony, all filled ready to put on the hive. In the height of a good flow there will be on each of my hives a super at the bottom empty to half full, an empty one on top, and between these two from four to six supers pretty well filled. With less I should lose honey. Instead of "generous starters," fill each section with foundation except  $\frac{1}{4}$  to  $\frac{1}{2}$  inch space between top and bottom starters.

## Feed for Cellar—Full Crop and 100 Percent Increase

1. How would you prepare sugar syrup to feed in cellar, when it is absolutely necessary to feed in mid-winter to preserve from starvation?

2. How would you make artificial increase of 100 percent in an apiary and at the same time secure full amount of honey crop from clover and basswood?

3. Is there any advantage to have the entrance  $1\frac{1}{2}$  inches deep and full width of hive? CANADA.

ANSWERS.—1. Just a plain syrup; 2 pints or pounds of water to 5 pints or pounds of sugar. Stir the sugar slowly into the hot water, and be very careful not to scorch it. But you might do better to make a plain candy and lay over the frames.

2. I don't know anyway to make increase without cutting down on the crop of honey unless it be in a place where there is a very heavy flow, and then any old way will do.

3. Yes; it gives chance for better ventilation in hot weather, and also in winter if you winter in cellar. But you cannot have  $1\frac{1}{2}$  inches under bottom-bars in summer unless you have some provision to prevent the bees building down.

## Improving Stock

1. I have 10 colonies of common bees of poor stock that I wish to improve this coming season. All that I care for is their honey-gathering qualities. There are people all about me that keep anywhere from 2 to 10 colonies of the same kind of bee in box-hives, and it would be almost impossible to buy them out and get them to stop keeping bees. I am thinking of putting an order with some reliable queen-breeder early in the season for two dozen Italian queens, and dividing my strongest colonies.

If I rear my own queens; that is, send and get a breeder queen and rear queens from her, I would have nothing but hybrids; but may be they would be as good honey producers as tested queens? Now, what is the best thing for me to do? If there is a better way to improve my bees than either of these I would like to have it. Our best honey-producing plants are clover, buckwheat and goldenrod. MARYLAND.

ANSWER.—It is true that in many if not most cases the first cross does as good work as the pure stock, but the next generation is likely to deteriorate. If you get 24 Italian queens, you'll be all right for a time, and then the bees will run down. Instead of getting the 24 all in one year you might do

better to get 2 each year for 12 years, and breed from them. Then you would have pure drones each year, whereas if you get the 24 all in one year you might not have a pure drone in four or five years.

## Early Work With Bees

1. I have purchased a few boxes of black bees. I want to put them into new hives and requeen them in the spring. How early would you advise working with them?

2. Would you requeen or hive them first?

3. Where can I get a first-class Italian queen free of disease? NORTH CAROLINA.

ANSWERS.—1. You can do a lot of mischief by beginning too early in the season to make any radical change in the condition of the bees. Don't think of transferring them into movable-frame hives until they are busy gathering nectar and in good condition to engage actively in the work of comb-building. That will hardly be before the time of fruit-bloom. It may be still better to wait until they swarm, then hive the swarm in a modern hive, and three weeks later break up the old hive, for at that time all worker-brood will be hatched out. The bees from the old hive may then be united with the swarm, or they may be kept as a separate colony and transferred into another hive.

2. It might be as well to requeen after the swarming or transferring.

3. In the proper season there are always found in this journal advertisements of those who have queens for sale, and these may be relied on as free from disease. A man who would send out a queen from diseased stock would steal.

## Miscellaneous Questions

1. I am going to buy five dovetailed 10-frame hives this spring. I only want honey for the house. Which is better for me, the extracting hive or sections. I read in the bee-books the extracting hive is best for home use. Please tell me why.

2. Can I get honey out of the extracting frames without the extractor? Can I melt it over the stove some way without breaking the comb, and will the bees store honey in the comb again?

3. Is sap from rock-maple good feed for bees? If so, should it be boiled down or fed as it comes from the tree? If boiled down,

how far should eight quarts be reduced to make the best feed?

4. Which smoker is better, a cold blast or hot blast? NEW HAMPSHIRE.

ANSWERS.—1. Extracting saves the bees much labor in building comb, so it is generally estimated that you can get about half more extracted than comb honey. So in deciding the question for yourself the question is whether you would rather have 100 pounds of comb honey or 150 pounds of extracted.

2. No; if you want to save the combs it's the extractor or nothing.

3. Yes; the bees will take it without boiling down. But look out not to feed it on days too cool for bees to fly freely.

4. Take the cold blast. Even with that I have known the smoke to be so hot with a strong fire as to melt the cappings of sections, and to kill bees.

## Transferring—Entrances in Winter

1. When is the best time to change bees from box-hives to movable frames? How is the best way to do it?

2. Do the metal-spaced frames give ample room for bees to pass between frames?

3. When a drone hatches at the same time a queen does, is he old enough to fertilize her?

4. When bees are wintered out-of-doors in boxes, chaff on all sides and top, with the  $\frac{3}{4}$ -inch side of the bottom up, will it be all right to leave the whole entrance open; that is, the whole length? IOWA.

ANSWERS.—1. Wait until they swarm, and then proceed as in answer to Kentucky.

2. Yes, they take up almost no room.

3. I don't know, but I hardly think so.

4. Most beekeepers would probably close up about  $\frac{2}{3}$  of it.

## Transferring

Which is the best way to transfer bees from boxes to hives? Last summer I had so many swarms that I ran out of empty hives and had to hive some in winter covers that I use. OHIO.

ANSWER.—It is getting to be considered the best plan to wait until the bees swarm, hive the swarm in a new hive, and then 21 days later to break up the old hive and add its bees to the swarm.

# REPORTS AND EXPERIENCES



## Good Crop in Idaho

I had 40 colonies, spring count, and increased to 83. I sold a little over 2000 pounds of honey, but we get only 10 cents per pound; very fine honey at that. I sold all my extracted honey for 8 cents per pound, but I was told by my customers that they never had finer honey than I furnished them. Ustick, Idaho. JOHN BLISS.

## A Big Increase and Some Surplus

Bees worked on dandelion on Dec. 6, 1913, the latest I have ever known. We have had the best fall crop of asters for years in this locality. I lost 65 colonies out of 70 in March from floods; that left me 5. I increased to 50 colonies, and produced 500 pounds of comb and extracted honey. How is that for increase? They are all strong and have plenty of honey to winter on. LOUIS WERNER.

Edwardsville, Ill., Dec. 16, 1913.

## Why Extracted Honey Should Have a Preference

I have read many articles in bee journals, some trying to prove that it is more profit-

able to raise comb honey, and others claiming that extracted is more profitable. I raise extracted exclusively from my four bee yards, and buy what choice comb I need for my trade, and no matter how good a crop I get I have to buy several thousand pounds every year to supply my customers, and the way I look at the matter is that most of the writers do not touch the main reason for raising extracted honey instead of comb, which is that of taking the price, say 12 cents, for extracted, and 50 percent more, or 18 cents, for comb honey customers. They will buy 10 pounds of extracted to one pound of comb, or at least I can sell 1000 pounds of extracted at 12 cents easier than I can 100 pounds of comb at 18 cents, and that when I have plenty of both kinds for the customers to select from. PARKSVILLE, N. Y. A. W. SMITH.

## Orton's Home-made Saw

As winter is a leisure time, the idea struck me it would be a good time to make a saw rig as described on page 377 of *Gleanings in Bee Culture* for 1912. To be brief, the thing was a flat failure with me. It takes a better kicker than a man in his 80th year. To help out, I got a neighbor, with his  $1\frac{1}{2}$ -horse-power gasoline engine, which made the saw



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sing like an angry bee.

The winter has been very mild on the coast, with lots of rain, and no freezing weather. The fields are as green as in June. I have 55 colonies of bees, mostly Italians, wintering well. M. S. SNOW.  
Littell, Wash.

## Good Prospects

We had a fair crop of excellent clover honey last season, and the prospects are bright for a good crop of clover this year. So far bees are in good condition with plenty of winter stores. ADDISON GOULD.  
Weston, W. Va., Jan. 17.

## Dry Season but Good

This is my third season with bees. I have 20 colonies, spring count, and they gave me 1000 pounds of honey this season, about 280 pounds of section honey, and the balance extracted. It is all of good quality, but the season was dry. J. A. HORN.  
Westwood, N. J., Dec. 10, 1913.

## Interest the Boys

As the time will soon be here for putting out some decoy hives, boys get busy and see how many swarms you can catch and make some easy money. I will tell how I do it:

Buy a candy pail at the store for 10 cents, split a small piece off the cover and fit a piece on that will extend out to make the alighting-board. This, with a few cross sticks, is all that is necessary if we were going to let them fill the pail, but if it is profit we want we will transfer them to a good standard hive. I have planned a false bottom to be nailed to a flat board with a cleat bracing it from both sides, and a hand-hold at the bottom for lifting it out.

If they have filled the pail with comb before you see them, all that is necessary is to cut around the pail and raise them out and shake them into your hive. Cut out the comb that you wish to save and leave plenty as a bait, and you have a better decoy hive than a new one.

I would advise that the pail be well painted on the outside, which will keep it from having any open cracks. My boys are going to put out quite a number.

Toledo, Iowa, Jan. 30. F. B. MILLARD.

## Rearing Some Brood

I opened two hives yesterday; one had no brood, the other had a circle 6 inches across one way and 8 the other, mostly sealed. The hive was packed on the summer stand; mercury at 56 degrees in the shade. J. L. STRONG.  
Clarinda, Iowa, Jan. 10.

## No Loss Yet

No loss so far. Bees have not been confined to the hives to exceed ten days at any one time this winter. They were out yesterday, and will get a good flight today. Bradshaw, N. Y., Feb. 10. C. B. PALMER.

## CAUCASIANS

### THE COMING BEE

Nothing lacking—excel in many ways all other races

I am the Pioneer in bringing the  
**TRUE GREY CAUCASIAN BEE**  
To the American Continent

Prices and explanatory free for a postal

Established in Michigan in 1878

**A. D. D. WOOD**

Box 61, Lansing, Mich., or  
Box 82, Houston Heights, Tex.

P. S. Will sell Nuclei from my Michigan yards only.

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## Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

### BEEES AND QUEENS.

QUEENS, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, \$8.00; Select, \$1.00 each; dozen, \$10.00. Tested Queens, \$1.25; dozen, \$12.00. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any.  
Wm. S. Barnett, Barnett's, Virginia.

PHELPS' Golden Italian Queens will please you.

BEEES AND QUEENS from my New Jersey apiary. J. H. M. Cook,  
1Atf 70 Cortland St., New York City.

GOLDEN all-over Queens. Untested, \$1.00. Tested, \$3.00. Breeders, \$5.00 and \$10.00.  
2Atf Robert Inghram, Sycamore, Pa.

1014 QUEENS—Moore's strain of leather-colored Italians. In April at 75c. Bees by the pound and Tested queens. Write us for prices on nuclei. Address,  
Ogden Bee & Honey Co., Ogden, Utah.

GOLDEN and 3-Banded Italians, also Carniolan Queens. Tested, \$1.00; untested, 75c each. Write for prices of bees per pound and nuclei. C. B. Bankston,  
tf Box 65, Buffalo, Leon Co., Tex.

ITALIAN QUEENS—Bees by lb. Descriptive List free. Apiaries under State inspection. Leaflets, "How to Introduce Queens," 15c. "How to Increase," 15c; both, 25c. 2Atf  
E. E. Mott, Glenwood, Mich.

QUEENS—10 percent discount for orders received before May 1, to be filled in May and June. Tested, \$1.00; untested, 75c. Dead ones replaced free. 2Atf  
S. Click, Rt. 2, Box 16, Mt. Jackson, Va.

PHELPS' Golden Italian Bees are hustlers.

CALIFORNIA'S Golden and 3-banded equal the best. Try them March 1. No. culls. Tested, \$1.25 to \$2.50. Select mated, one, 75c; 12, \$8.00; 50, \$32.00; 100, \$60.00.  
W. A. Barstow & Co., San Jose, Calif.

ITALIAN QUEENS, 5-banded, for sale. Ready April 15. Untested queens, 75c each, or \$7.25 per dozen. Safe arrival guaranteed. 3Atf  
W. W. Talley, Queen Breeder,  
Rt. 4, Greenville, Ala.

STRONG COLONY of Italian bees, with tested queen, in a complete new hive, \$10. Tested queen, \$1.50. I. J. Stringham,  
105 Park Pl., N. Y.  
Apiaries, Glen Cove, L. I.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Golden and their honey-getting qualities. Price, \$1.00 each; Tested, \$2.00; Breeders, \$5.00 and \$10.00.  
2Atf J. B. Brockwell, Barnetts, Va.

QUEENS bred from Moore's and Doolittle's best Italian stock. Untested, 60c each; \$6.00 per dozen; \$50 per 100. Tested, 90c each; \$10.20 per dozen; \$80 per 100. Delivery guaranteed. Book orders now. Nuclei any quantity; 2-frame, \$1.50; 3-frame, \$2.00. Add price of above queen wanted.  
Spencer Apiaries Co., Nordhoff, Calif.

WE requeen our bees every year with best Italian stock to prevent swarming. We offer the one-year old queens removed from these hives at 50c each; \$5.40 per doz.; \$40 per 100. Delivery guaranteed. Book orders now. Nuclei any quantity; 2-frame, \$1.50; 3-frame, \$2.00. Add price of above queens wanted.  
Spencer Apiaries Co., Nordhoff, Calif.

DUNN'S Golden Italian queens, bred strictly for business that produce a strong race of honey gatherers. March 1 to Oct. 15. One, mated, 75c; 6, \$4.25; 12, \$8.25; 50, \$32.50; 100, \$60. L. J. Dunn, Queen Breeder,  
2Atf Box 337 G, R. R. 6, San Jose, Calif.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; Tested, \$3.00; Breeders, \$5.00 and \$10.00. C. W. Phelps & Son,  
3 Wilcox St., Binghamton, N. Y.

FOR SALE—Moore strain and Golden Italian queens. Untested, \$1.00; 6, \$5.00; 12, \$10.00. Carniolan, Banat and Caucasian queens; Select Untested, \$1.25; 6, \$6.00; 12, \$10.00. Tested, any kind, \$1.50; 6, \$8.00. Choice Breeders, \$3.00 to \$5.00. Circular free.  
W. H. Rails, Orange, California.

QUIRIN'S Famous improved Italian queens are northern bred and extremely hardy; over 20 years a breeder. Colonies, Nuclei and bees by the pound. Ask for Circular, it will interest you. H. G. Quirin,  
The Queen Breeder, Bellevue, Ohio.

FOR SALE—3-banded Italian queens, nuclei and bees by the pound. Being large honey-producers, we breed hustlers. Untested queens, each, 75c; tested, \$1.25. Without queens, 1 pound of bees, \$1.25; 2-frame nuclei, \$2.50. Write for a complete price list.  
2Atf Brown & Berry, Hayneville, Ala.

CALIFORNIA ITALIAN QUEENS—3-banded and Golden by return mail after March 15. Select untested, one, 75c; 12, \$8.00. Tested, \$1.00; breeder, \$3.00. Bees by the pound, a specialty, ready April 1. 1 lb., \$1.35; 2 lb., \$2.50. Delivery and satisfaction guaranteed. Correspondence solicited. Circulars free.  
J. E. Wing, 155 Schieler Ave., San Jose, Calif.

THREE-BANDED and Golden Italian queens. Ready March 1. They have been bred for three points, prolificness, gentleness and honey-gathering qualities. Prices, Select Untested, 75c each; 6, \$4.25; 12, \$8.25; 50, \$32.50; 100, \$60. Tested, \$1.50; Select Tested, \$2.00.  
Garden City Apiary Co.,  
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I WILL SELL and ship an equivalent of 500 2-frame nuclei from 400 colonies in northern Louisiana, in April and May.

Two-comb nuclei.....\$2.00  
Three-comb nuclei.....2.75  
One pound bees in Root cages.....1.50  
Two pound bees in Root cages.....2.50  
Young queens for business—extra......75  
You can buy bees from me for much less money than the value of the honey it takes to winter in the North. And you can use your extracting combs from your foul-broody colonies. Address until March 14—  
H. C. Ahlers, R. D. 1, West Bend, Wis.

## HONEY AND BEESWAX

"NULL'S FAMOUS MELILOTUS HONEY." Sample for stamp. Null Co., Demopolis, Ala.

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,  
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FOR SALE—No. 1 white comb, \$3.50 per case; No. 2, \$3.20; 24 pounds to case.  
Wiley A. Latshaw, Carlisle, Ind.

\$1000 (one thousand). I will pay the above amount in cash for one pound of honey that is equal to my *Red Ripe* (Harnessed Sunbeams) Honey in digestibility, nutrient value or flavor. Samples and prices free.  
C. W. Dayton, Owensmouth, Calif.

INDIA—The Eastern Commercial Agency, 3140 Richey Road, Ahmedabad, Contractors and Agents, export beeswax and India provisions, pickles, drugs and condiments. Import motor, electric and municipal goods and machinery.

EXTRACTED HONEY—Best pure Illinois. White Clover and blends with Sweet Clover. Amber Fall and Spanish-needle grades. Also fine Western Water-white and Light Amber Alfalfa. All packed in 5, 10 and 15 lb. cans. Some in barrels. Samples and prices Free. Dadant & Sons, Hamilton, Ill.

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**FOR SALE**—Choice extracted honey, thick, well ripened, delicious flavor. Price, 9c per pound in new 60-lb. cans. Address, 2Atf J. P. Moore, Morgan, Ky.

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**DEALERS and producers who buy honey** kindly ask for a late number of the Review, giving a list of members having honey for sale. Many carloads are listed in each number. Address, The Beekeepers' Review, Northstar, Mich.

## SUPPLIES.

**FOR SALE**—Root's goods and Dadant's foundation at factory prices. Spencer Apiaries Co., Nordhoff, Calif.

**BEE-KEEPER**, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., Greenville, Tex. 4Atf

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**THE WEAVER automatic honey-extractor.** It reverses at full speed, is simple and positive, saves 50 percent of labor and at the same time increases the output 50 percent. A 4-frame will do the work of an 8. Everyone in the market for an extractor send for full particulars. Weaver Bros. Richmond & Falmouth, Ky.

**THE NATIONAL Beekeepers' Association** now buy supplies for their members. Send us your order, enclosing the same money you have to pay others, and we will buy them for you on the co-operative plan. If not a member we reserve the right to retain \$1.50 from the profits on your first order to pay your membership dues and subscription to the Review one year. Sample copy of the Review free. Address, National Beekeepers' Ass'n., Northstar, Mich.

## FOR SALE

**75 COLONIES** of bees for sale. Write Jay C. Davis, Rt. 2, Marshfield, Wis.

**HAVE MORE Bees** than I can handle, also extra farm for sale. W. T. Bailey, Suffolk, Va.

**DOUBLE the honey crop** and save half the labor, 25c. Money back if not satisfied. O. N. Baldwin, Baxter Springs, Kan.

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**RUFUS-RED BELGIAN HARES.** Price list free. Harvey L. Stumb, Quakertown, Pa.

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**THE BEEKEEPERS' REVIEW Clubbing List** The Review and American Bee Journal one year, \$1.50. The Review and Gleanings one year, \$1.50. All three for one year only \$2.00. Dealers, or those wanting to buy honey, kindly ask for a late number of the Review having a list of 100 producers having honey for sale. Address, The Beekeepers' Review, Northstar, Mich.

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**PURE WHITE and Blue Barred Homer Pigeons.** Good breeders and mated pairs. J. W. Hopson, Bedford, Iowa.

**SINGLE COMB Brown Leghorns.** Champions of the West. Over 300 prizes won. My quarter of a century record is free. 3Atf C. F. Lang, La Crosse, Wis.

**FOR SALE**—Single Comb Buff Orpington eggs for hatching, pure bloods; \$1.00 per 15 or \$5.00 per hundred. Satisfaction Guaranteed. W. H. Payne, Hamilton, Ill.

**UNTESTED QUEENS**, 75c each; 7.50 per dozen. Tested, \$1.50. Breeders (choice), \$5.00. Nuclei, \$1.25 per frame; good supply of bees, ½ lb. Bees (Italians) with untested queen, \$2.50. One pound with untested queen, \$3.00. Full colony in 8-frame hive, with queen, \$6.50. Full colony in 10-frame hive, with queen, \$7.50. Inquiries from jobbers solicited. Safe arrival and satisfaction guaranteed. Excellent mail and express service. Only twelve hours ride to St. Louis, Mo. Can ship March 20; probably March 10. Pure Buff Leghorn and Ancona eggs for hatching, \$1.00 per setting.

**STOVER APIARIES**  
Mayhew, Mississippi

## Beekeepers' Supplies and Fruit Packages

We manufacture the famous Sheboygan Hive, which always gives absolute satisfaction. Our perfect sections, made from selected white basswood, are recognized as the best on the market.

Catalog now ready for distribution. Write for copy.  
**SHEBOYGAN FRUIT BOX COMPANY,** Sheboygan, Wisconsin

## "NUTMEG" ITALIAN QUEENS

By return mail.

**AFTER**

**June 1st**

**untested**

**\$1.00**

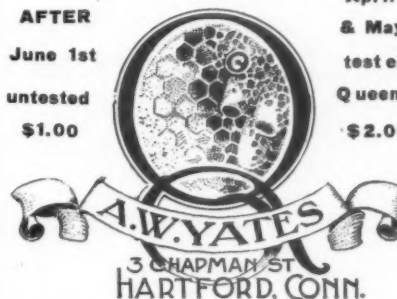
**April**

**& May**

**tested**

**Queens**

**\$2.00**



Write for prices by the hundred

## FOR SALE

500 colonies of bees and a complete outfit comprising the following:

One-half ton 40 H. P. rebuilt Logan Motor Truck, in perfect running order; one 8-frame Automatic Power Extractor; one 1½ H. P. Engine for above extractor; one 4-frame extractor; one 2-frame extractor; one Peterson capping melter; one steam uncapping knife; 1200 sets of extracting combs; 200 extra empty hives; 300 queen-excluders; 150 comb-honey Danz. supers; 5 portable honey houses; one Hersher wax press; one Underwood typewriter; 200 lbs. Dadant's medium brood foundation; 15,000 lbs. white clover and amber fall honey, and other articles needed to run a large bee business. For further particulars write—

Mrs. F. B. Cavanagh, Hebron, Ind.

## HONEY AND BEESWAX

**CHICAGO, Feb. 16.**—Sales have improved in volume during the past 30 days, prices, however, are unsatisfactory in that they have a lower tendency, and some of the comb honey shows granulation, which renders it unfit for table use. Fancy grades sell in small quantities around 15c per pound, but the off grades are difficult to place at uncertain prices. Extracted honey consisting of white clover and basswood are rather firmly held, and sell at from 8@9c per pound, according to quality and package, but the western and southern grades of white are very dull and sell at from 1@2c per pound below these figures, and are most difficult to move in quantities. Beeswax sells upon arrival at from 31@33c per pound, according to color and cleanliness. R. A. BURNETT & Co.

**NEW YORK, Feb. 18.**—Our market remains in the same condition, dull and inactive. As to comb honey there is little demand for No. 1 and fancy white, while off grades, mixed and buckwheat are almost unsalable. During the past few weeks we have received several shipments of the last mentioned grades which we would rather not have sent to us at all. The honey is more or less candied, combs poorly filled, some not fastened to the comb and broken loose, and as the season is practically over with no demand to speak of, it will be hard work to dispose of these goods. We can not encourage shipments of off grades of comb honey, mixed or buckwheat at this time, for we feel sure that we cannot make a sale in a reasonable time nor satisfy the shippers, and therefore would rather not handle these grades at all. As to extracted honey, the only grades for which there is a demand at this time is fancy

quality white clover which is selling at from 8½@9c per pound; all other grades are in poor demand. HILDRETH & SEGELKEN.

**CINCINNATI, Feb. 17.**—There is no demand for either comb or extracted honey at the present time. Nevertheless we would sell comb honey at \$3.75 per case for fancy and No. 1, and 7½@10c for our white clover extracted honey. For our amber honey from 5½@8c per pound, according to quantity and quality. These are our selling prices. Kindly observe. For bright yellow beeswax we are now paying 32c a pound, delivered here. THE FRED W. MUTH CO.

**KANSAS CITY, Mo., Feb. 16.**—The supply of comb honey is large, demand light. Supply of extracted honey fair; the demand also only fair. We quote our market as follows: No. 1 white comb, 24 sections per case, \$2.50 to \$2.65; No. 2, \$2.00 to \$2.25. No. 1 amber, \$2.25 to \$2.50; No. 2, \$2.00 to \$2.25. White extracted, per pound, 8@8½c; amber, 7½@8½c. Beeswax, per pound, 25@30c. C. C. CLEMONS PRODUCE COMPANY.

**DENVER, Feb. 10.**—Our local market is well supplied with honey, and our jobbing quotations are as follows: Strictly No. 1 white, per case of 24 sections, \$2.70; choice, \$2.57. No. 2, \$2.43. Extracted, white, 8@9c; light amber, 7@7½c. We are in the market for beeswax, and pay 30c per pound in cash, and 32c in trade delivered here.

**THE COLO. HONEY-PRODUCERS' ASS'N.,** Frank Rauchfuss, Mgr.  
**BOSTON, Feb. 20.**—Fancy and No. 1 white comb, 15@16c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c. BLAKE-LEE COMPANY.



# American Bee Journal

## WANTED Honey!

**Extracted and Comb**

Will buy or handle on  
Commission

**Beeswax**

**Will Pay Highest Price.**

Yours very truly,

**HILDRETH & SEGELKEN**

265-267 Greenwich St., New York, N. Y.

### 3-BAND LONG-TONGUED RED- CLOVER ITALIAN QUEENS



1912 that he bought 50 more in 1913.

**One Untested, 75c; 6, \$4.00; 12, \$7.50; 25, \$13.50; 50, \$25.00**

Double the above for tested queens. Bees by the pound: One lb., \$2.00; 2 lbs., \$4.00. One-frame nucleus, \$2.00; 2 frame, \$3.00; 3-frame, \$4.00. To all the above packages add the price of queen. I will begin to send out queens in April.

**Positively** no checks will be accepted. Send money by P. O. Money Orders. All queens arriving dead will be replaced if cage is returned by return mail.

**J. B. ALEXANDER, CATO, ARK.**

### EXTRACTED HONEY

Just received car New Utah Alfalfa Honey, **8 1-2 cents** a pound f.o.b. Kansas City, Mo. **C. C. CLEMONS BEE-SUPP. CO.** Department A, Kansas City, Mo.

## MARCHANT'S Island-bred Queens

Bred from Selected Mothers

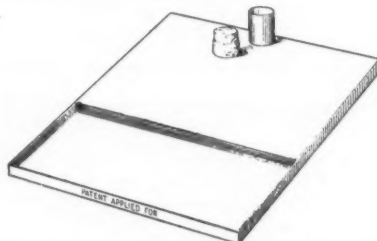
And mated to isolated drones of a different strain. My aim is quality and not quantity. So if you wish any of these choice priceless mated queens, order now or you may not get them, as I am only going to rear a limited number. Free from disease, and your money back if not satisfied. The A. I. Root Co. use my queens, which is proof of their quality. No need to write for a lower price. Reference, the American Exchange Bank of this city. Prices, Untested, \$1.50; 6 for \$6.00; 12 for \$10. In lots of 25 or more, 75c each. Select Tested, \$3.00; Breeders, \$5.00 and \$10.

**A. B. MARCHANT**

Apalachicola, - Florida

**The Offer Hive-Entrance Bee-Feeder.**—Some of the many good points of the Entrance Feeder are these:

1. It is made of heavy galvanized iron and will last a life-time.
2. It reduces the hive-entrance.
3. It reaches where the bees can get at the feed even in cool weather.
4. It feeds the right amount.
5. It will not cause robbing.
6. It will not disturb the colony while feeding.
7. It permits quick work.
8. The bees will not drown in it.



I am in a position to furnish all demands for these feeders at the following prices, f. o. b. Chicago: One for 20c; 5 for 18c each; 10 for 16c each. If ordered by mail, add 10c each for packing and postage.

Address all orders to—**A. H. OFFER,**  
6259 Patterson Ave., Chicago, Ill.

## Dixie Swarms

Direct to You in April

Stop and think for half a minute what a small package of bees or nuclei would do if put on those unoccupied combs early in the spring. The cost is just a drop in the bucket, and your 1914 honey crop may be doubled. Bees by the pound. Queens and nuclei shipped during April. Carefully selected stock. Excellent express and mail service. **Prices low.** Save money by writing at once, for our price-list and estimate on your order.

**CONNEAUT LAKE BEE COMPANY**

Meldrim, Georgia

## ITALIAN QUEENS

Try Murry's Strain of 3-Banded  
Italian Queens

Best stock obtainable at any price. 18 years' experience as a queen-breeder. Satisfaction guaranteed or money refunded. 550 nuclei, besides 11 apiaries to draw from. Write for booklet, free. Tested queens in March. Untested in April.

**Prices before May 10th:**

Untested, 75 cts. straight; Tested, \$9.00 per 100.

**After May 10th:**

Untested, one for 70 cts.; 5 for \$4.00; 100 for \$65.00. Tested, one for \$1.00; 6 for \$5.00; 100 for \$80.00. Select Tested, \$1.50. Breeders, \$5.00.

Bees by the pound: One pound, \$2.00; 10 pounds, \$18.50; 100 pounds, \$180.00.

Better let me book your orders now, for bees or queens in quantities. No disease.

**H. D. MURRY, Mathis, Texas**



**Buy Carniolans in Carniola**

Pure Carniolan Alpine Bees

Write in English for Book-

let and pricelist. Awarded 60

Honors

**Johann Strgar, Wittnach**

P. O. Wocheiner-Feistritz

Upper - Carniola (Krain), Austria

## ITALIAN BEES



**Choice Home-bred Queens Reared  
In strong colonies.**

**PRICES FOR APRIL**

One Tested Queen.....\$2.00  
" Select Tested..... 2.05  
" Breeder..... 4.00  
" Comb Nucleus—no  
Queen..... \$1.75

**Safe arrival guaranteed.**

For description of each grade of  
queens send for FREE catalog.

**J. L. STRONG,**  
Clarinda, - - Iowa

## Three-Band Italian Queens For 1914



I will again have for sale, after April 1st, young queens reared from my best Leather-Colored Breeders. You will make sure of improving your stock and securing a crop of honey if you introduce some of these queens. The Leather-Colored Italians are recommended and used by the largest and most progressive bee-men of today.

Untested, \$1.00 each; \$9.00 per doz., \$75 per hundred. Select Tested, \$1.50 each.

**C. S. ENGLE, Beeville, Bee Co., Texas**

## Q-U-E-E-N-S

The Old Reliable 3-Band Stock



My queens are reared from imported stock which makes a beautiful bee. They are fine honey-gatherers, and very gentle. Try my queens. Send me your order, and if not satisfied will return your money. Safe arrival

guaranteed. Untested Italian, 1, 75c; 6 \$4.25; 12, \$8.00.

**N. FOREHAND, R. F. D. 2, Brewton, Ala.**

## Fresh Fruits for Dyspepsia

Constipation, etc. Try it. I did with fine success. My motto: More fruit, less starch. Also fine for healthy people; promotes longevity. Just as well raise 'em yourself. (Outdoor exercise helps, too.) Better start your beds this spring. The following list will give you a succession of the most healthful fruit nearly all summer: Strawberries, Glen Mary, early, large, 25c for ten; 70c for 100. Corsican, extra large, late, fine, 50c for ten; \$2.00 for 100; hundred of each, \$2.50; fifty of each, \$1.35. We are the headquarters for the Plum Farmer Black Raspberry, hardy, early, large, good, kind canners demand, Lucretia dewberry, Snyder Blackberry, 60c for ten; \$2.50 for 100. Guaranteed strong plants, true to name. Government inspected.

**Riverside Nursery, Berne, Ind.**

# Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years. In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority

## JANUARY 1—Bees and Poultry.—

We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

## FEBRUARY 1—Bees and Fruit.—Our

March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in honey-production, will tell of the value of bees in orchards.

## MARCH 1—Beekeeping in Cities.—

Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in

attics or roofs, and in back lots. We also have a true story of a beekeeper in a city who was fined \$100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

**APRIL—Breeding.**—Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

**JUNE 1—Moving Bees.**—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

**AUGUST 1—Crop and Market Reports.**

—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

**SEPTEMBER 1—Wintering.**—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

## IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, \$1.00, will bring you.

**The A. I. ROOT COMPANY, Medina, Ohio**

## SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

## New 64-Page Catalog

Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

## New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

# C. H. W. WEBER & CO.

CINCINNATI,

2146 Central Avenue,

OHIO



# American Bee Journal

## THALE'S REGULATIVE VACUUM BEE-FEEDER



**T**HIS ILLUSTRATION shows the special designed bottle which controls the feed on Thale's Regulative Vacuum Bee-Feeder. This feeder is designed under the latest scientific method of controlling the feed by means of Vacuum and keeping the feed at a certain level, and in reach of the bees at all times. The slide is the means of increasing or decreasing the amount of feed. (See Feb. 1 issue.) This feeder is manufactured by the most skillful workmen, and its construction is perfect. Over 20,000 of these feeders were sold in January, and some of those who have received them have re-ordered more, and have expressed their opinion that this feeder will unquestionably be the most profitable investment for the beekeepers. The Chicago-Northwestern Beekeepers' Association, which was held in Chicago Dec. 17-18, 1913, to whom I have described and demonstrated this feeder in detail and in use, gives the following endorsement:

WHEREAS, This Convention has been impressed by the exhibit of the Thale Regulative Vacuum Bee-Feeder, and believe that the same is a good device for stimulative feeding  
THEREFORE, Be it resolved that the Chicago-Northwestern Beekeepers' Association in convention assembled, do heartily endorse the above device as a practical instrument for the beekeeper at large.

I. E. PYLES,  
ARTHUR STANLEY,  
W. B. BLUME.

I want over 100,000 of these feeders in use by June 1. I will ship you as many feeders as you need on ten days' free trial in your own apiary, and if these feeders do not work as represented, you may return them to me at my expense, and your money will be refunded. Send for free trial offer. Address, Free Trial Dept., A 94.

Send for feeder circular and bee-supply catalog. I carry a full line of Lewis Beeware and Dadant's Foundation. One of my Vacuum Bee Feeders complete with two bottles FREE with every ten-dollar order. Send me a list of your wants—it is no trouble to answer letters.

### TERMS, CASH WITH ORDER

Sample feeder, with two bottles, complete by mail postpaid 55c  
Ten feeders, complete with one bottle, by freight or express, each 33c  
All orders over ten feeders each only 30c  
Extra bottles with cork valve, each 10c

Eastern buyers send orders to Earl M. Nichols,  
Lyonsville, Mass., and B. H. Masters,  
Edison, Ohio

### H. H. THALE

Inventor and Manufacturer

Box A 25

Maywood, Missouri

### Organized Co-operation

## THE WESTERN HONEY BEE

A new magazine owned and run by the bee-keepers, filled with Western life as depicted by the best talent on bee topics obtainable. Special department on crop and market conditions during season.

### ADVERTISERS

#### Queen-Breeders' Department

1 inch, \$2.00 per issue  
Classified, 15c a line

Write for particulars

### Published Monthly by the

California State Bee-Keepers' Ass'n

Los Angeles, Calif.

J. D. BIXBY, Editor,  
Covina, California.

## SUPERIOR GOLDEN QUEENS

Untested, \$1.00; 6, \$5.00; 12, \$9. Select Untested, \$1.25; 6, \$6, 12, \$10. Prices on application for tested and untested queens by the hundred. Address,  
**T. S. HALL, Talking Rock, Ga.**

**Honey in Tubes.**—"Honey put up in collapsible tubes like tooth-paste, is a novelty in the German market."—*Popular Mechanics* for February.

## ALSIKE CLOVER SEED

Small and large red, alfalfa, white and yellow sweet clover seed, timothy, blue grass, rape, millet, etc. Also seed corn.

Catalog of apiary supplies and seeds free

**F. A. SNELL,**  
Milledgeville, Illinois

### MAKE MORE MONEY FROM BEES

Blanke's Bee-Book Free

### JOHNNIE-ON-THE-SPOT DELIVERIES

When you order Bee Goods, you want them "now"—we are in the very heart of the Bee Section—no city with so good package car service—largest stock west of the Mississippi. Whenever possible, orders shipped same day as received—more carefully packed than ordinary.

**Blanke's Bee-book Free.**—a catalog filled with helpful tips for either beginner or old timer. Write today before you need supplies.

Department 1  
**Blanke Mfg. & Supply Co.**  
St. Louis, Missouri

## Add Poultry! This Is the Profit Year

This is the year to take on poultry with your bee business. Our Free Bulletin service a complete guide. Never before was there such a demand for chickens and eggs and at amazing prices. Make sure of biggest profits with *proved* equipment.

## CYPHERS INCUBATORS and BROODERS

World's Standard. Self-regulating; self-ventilating. Fireproof; insurable. Highest records for big, continuous hatches. Get Cyphers Company's 244-page catalog and poultry guide before you buy. Eight vitally helpful chapters. Send a postal today.

**Cyphers Incubator Company**  
Dept. 83 Buffalo, N. Y.



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## MARSHFIELD GOODS

### BEE KEEPERS :—

We manufacture Millions of **Sections** every year that are as good as the best. The **CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**

Our Catalog is free for the asking.

**Marshfield Mfg. Co.,**

**Marshfield, Wis.**

## PAGE - KENKEL MFG. CO.

**Manufacturers**

OF THE

**"NONE BETTER"**

### BEE-KEEPERS' SUPPLIES

Perfect sections from young, white, basswood. White Pine Hives and Supers. Excellent Shipping-Cases. Brood-Frames, Separators, etc. We invite your correspondence.

**Guarantee**—All goods guaranteed perfect in workmanship and material or money cheerfully refunded.

**Page-Kenkel Manufacturing Co.,**  
New London, Wis.

FOR  
THE  
BEST

## Early QUEENS



Send me your address for Italians and Carniolans. I BEGIN mailing Queens early in March. Untested, 75 cts. each. Tested, \$1.25 each. Circular free.

**Grant Anderson, San Benito, Texas**

## PHARR WANTS YOUR ORDERS FOR QUEENS



**Goldens and 3-Banded Italians**

For twelve years we have asked for your orders and we have gotten all we could fill and sometimes more. But we have ever tried to serve you right, and will guarantee similar treatment in the future. Prices of Untested, \$1.00; Tested, \$1.50; Breeders, 3.00 to \$5.00. Write for prices in large quantities. Address,

Orders booked now—delivery last of May or June

**John W. Pharr, Berclair, Texas**

## CARNIOLAN QUEENS

Carniolans are excellent winterers, build up rapidly in the spring, are very gentle, very prolific, cap their combs very white, enter supers readily, and keep their colonies strong at all times. Write for our free paper, "Superiority of the Carniolan Bee," explaining more fully, giving briefly best systems of management. Untested queens, \$1.00 each; doz., \$6.00. Full colony with tested queen, 8-fr. dove or Danz. 10-fr., \$10. in April.

**ALBERT G. HANN, Pittstown, New Jersey**  
Carniolan Queen-Breeder.



## Make Your Hens Lay

You can double your egg yield by feeding fresh-cut, raw bone. It contains over four times as much egg-making material as grain and takes the place of bugs and worms in fowls' diet. That's why it gives more eggs—greater fertility, stronger chicks, larger fowls.

### MANN'S LATEST MODEL BONE CUTTER

cuts easily and rapidly all large and small bones with adhering meat and gristle. Automatically adapts to your strength. Never clogs. Sent on 10 Days' Free Trial. No money down. Send for our free books today.

F. W. MANN CO.

Box 348

MILFORD, MASS.



## Dittmer's Foundation

Is the **Comb Foundation** made to suit the **Honey Bee.**

It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

It's the **Comb Foundation** to give your **Honey Bees.**

Ask for more information; also prices and **FULL DISCOUNT** on all Bee-Supplies.

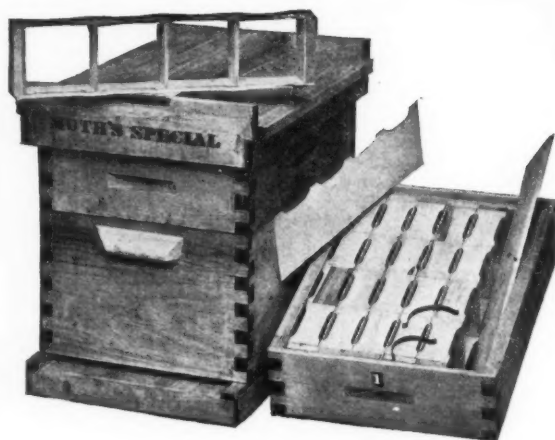
**Gus Dittmer Company**  
**Augusta, Wisconsin**



M

# "Now, Then—Let's Talk Business"

M



**S** OON, you will need many additional Bee Supplies for the new season—Hives, Brood-frames, Comb Foundation, Honey-boards, Smokers, Bee-veils, Brushes, and whatnot. It is not too early to get your mind on this subject right now. Send for our new 1914 catalog—just off the press. A post card will do. It tells all about—

## THE MUTH SPECIAL Dovetailed Hive

This Hive has several remarkable features. The cover and bottom boards are of  $\frac{7}{8}$ -inch material so rigidly constructed as to be absolutely warp proof. Besides this extra efficiency we have added a Honey-board directly under the cover, forming a dead-air space which excludes both cold and heat, making this the best wintering Hive on the market today, and far superior to others in summer. The boiling sun has no effect on the interior of this Hive, which is always comfortably cool, and prevents the comb from melting down. Another feature: When you take off the honey simply slide the Honey-board between the brood-chamber and the super, and the bees will clear out of the super by way of the Bee-escape. Price same as for the ordinary Hive.

# THE FRED W. MUTH COMPANY

204 Walnut St.

"The Busy Bee Men"

Cincinnati, Ohio

**P. S.** Send us your old comb and cappings for rendering by our high pressure hydraulic press. It gets the last drop from the slumgum. Means money to you. Write at once for particulars.

M

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## DADANT'S FOUNDATION

**WE MAKE IT GOOD  
THE BEES MAKE IT FAMOUS**

The Reputation of

## DADANT'S FOUNDATION

Has been built on its merit

**It is a Favorite with Beekeepers**

**BECAUSE**

**It is so well liked by the BEES**

Whether it's a pound or whether it's a ton, every sheet is **PERFECT**

Satisfaction Guaranteed in Every Way

**DADANT & SONS,  
HAMILTON, ILLINOIS.**

DADANT'S FOUNDATION

DADANT'S FOUNDATION